The Proposal is expected to result in the removal of all vegetation that occurs within the Subject Site, this including one hollow bearing trees and a number of insect attracting plants.

(ii) "... whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action...", and

Microchiropterans can easily negotiate urban and open areas and residential properties. The development of the Subject Site would therefore not fragment or isolate any habitat areas currently available to this species.

(iii) "...the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality..."

The resources present within the subject site are not considered to be unique to this locality. Within the adjacent woodlands, including the adjacent Castle Hill STP, similar, better-developed resources are present (these including native ground cover, understorey and middle storey plants). The importance of the portion of the subject site likely to be modified as a result of the Proposal is therefore considered to be limited. The vegetation and habitat to be removed is therefore not considered important for the long-term survival of the Eastern False Pipistrelle in this locality.

(e) "...whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly)..."

No critical habitat would be adversely affected by the proposal. The Subject Property and Study Area are not listed as critical habitat under Part 3 Division 1 of the *TSC Act*.

(f) "...whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan..."

No recovery plans have been prepared for the Eastern False Pipistrelle. However, 17 priority actions have been identified to assist the recovery of this species. Of these, the following is relevant: "prepare [environmental impact assessment] guidelines which address the retention of hollow-bearing trees maintaining diversity of age groups, species diversity, structural diversity. Give priority to largest hollow bearing trees."

The loss of one (1) hollow-bearing tree within the modified grassland habitat of the Study Area, whilst retaining hollow-bearing trees within the eastern woodland portions of the Study Area are considered to comply with this priority action.

(g) "...whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process..."

Currently 31 Key Threatening Processes for mainland NSW are listed under Schedule 3 of the *TSC Act*. Of these, the "clearing of native vegetation", "loss of hollow-bearing trees" and "removal of dead wood and dead trees" would be applicable to the proposal. The loss of a small amount of native vegetation from the Subject Site, compared to that contained within the adjacent vegetated areas, is not considered significant. As such, it is not considered that the Proposal would constitute a significant Key Threatening Process such that the life cycle requirements of this hollow dependent threatened microchiropteran would be compromised.



7.2.2. Expected impact on the Eastern False Pipistrelle

The undertaking of the proposal would not disturb, remove, modify or fragment any habitats critical to the life cycle requirements of the Eastern False Pipistrelle. The works would not result in the significant loss of hollow bearing trees, or any major occurrences of insect attracting plants.

It is NOT considered that the Proposal would have a significant impact on the Eastern False Pipistrelle, its populations or habitats. Therefore, the preparation of a Species Impact Statement that further considers the impacts of the Proposal on this microchiropteran is NOT REQUIRED.

3.4.6 Grey-headed Flying-fox (Pteropus poliocephalus)

A consistent flow of Grey-headed Flying-foxes were observed flying over the Subject Property during the course of the field survey. Whilst conducting the nocturnal searches, no individuals were observed or heard calling from within the Study Area itself. Although not recorded during the field survey, as this species will utilise gardens and remnant trees, there is the potential that it could forage within the Study Area on occasion. During the field investigation, no active or historic Flying-fox camps were observed within, or near the Subject Property or Study Area.

Commonwealth EPBC Act Assessment

Given consideration to the Assessment Criteria provided within the *EPBC Act* Significant Impact Guidelines (Environment Australia 2000), these criteria being used to determine whether an action has, will have, or is listed to have a significant impact on a matter of national environmental significance; it is not considered that the subdivision and subsequent development of the Subject Site will:

- Lead to a long-term decrease in the size of an important population of the Grey-headed Flying-fox;
- Reduce the area of occupancy available to an important Grey-headed Flying-fox population;
- Fragment an existing important Grey-headed Flying-fox population into two (2) or more population;
- Adversely affect habitat critical to the survival of the Grey-headed Flying-fox;
- Disrupt the breeding cycle of an important Grey-headed Flying-fox population;
- Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Grey-headed Flying-fox is likely to decline;
- Result in invasive species that are harmful to the Grey-headed Flying-fox becoming established in the vulnerable species' habitat; or
- Interfere substantially with the recovery of the species.

Therefore, in relation to the Grey-headed Flying-fox, the Proposal can proceed as planned WITHOUT the matter being referred to the Federal Minister for the Environment, Heritage and the Arts.

State TSC Act Assessment of Significance

An Assessment of Significance has been carried out under Section 5A of the *EPA Act* to determine "whether there is likely to be a significant effect on this threatened species, its populations, ecological communities, or habitats".

(a) "...in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction..."

The rezoning and any subsequent residential development of the Subject Property is expected to remove most of the site's vegetation. Though the development of the site would reduce the extent of foraging resource available to the Grey-headed Flying-fox, this is not considered to limit the overall extent of resources available in this locality. Adjacent areas, particularly those present along Smalls Creek will provide foraging opportunities for this species should it occupy and utilise the Study Area on occasion.

The development of the Subject site would <u>NOT</u> have an adverse effect on the life cycle of this species such that the viability of its local population is placed at risk of extinction.

(b) "...in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction...",

An endangered population is defined under the *TSC Act* as 'a population specified in Part 2 of Schedule 1'. At the present time, there are no endangered populations of this species listed under the *Act*. As such, the Proposal would not be significantly compromising an endangered population.

(c) "...in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction..."

Not applicable to a threatened species.

(d) "...in relation to the habitat of a threatened species, population or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed...", and

The rezoning and subsequent development is expected to require the removal and modification of all vegetation from the Subject Property and Study Area. Although a small area (approximately 20,000 square metres) of potential foraging habitat available to the Grey-headed Flying-fox will be removed or modified by the Proposal, compared to the extent of this resource retained within both

the Study Area and surrounding areas, this would not limit the overall foraging opportunities available to the Grey-headed Flying Fox.

(ii) "... whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action...", and

The Grey-headed Flying-Fox can easily negotiate open areas, urban environments and infrastructure. Given the limited size of the Subject Site, the development of this area is not expected to result in the disturbance this species foraging or movement patterns.

(iii) "...the importance of the habitat to be removed, modified, fragmented or isolated to the longterm survival of the species, population or ecological community in the locality..."

The vegetation present within the Subject Site is not considered to be important for the long-term survival of the Grey-headed Flying-fox. The removal of the site's vegetation will not limit the extent of foraging, sheltering or breeding resources available to this species in this locality.

(e) "...whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly)..."

No critical habitat will be adversely affected by the proposed development. The Subject Property, Study Area or environs are not listed as critical habitat under Part 3 Division 1 of the *TSC Act*.

(f) "... whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan",

To date, there is no recovery plan or threat abatement plan prepared for the Grey-headed Flyingfox. The DECCW (2010b) has identified 10 Priority Actions to help recover this species, none of which area the responsibility of the proponent.

(g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

Key threatening processes are defined under Schedule 3 of the *TSC Act*. DECC (2008b) lists the following four (4) 'species-specific' threatening processes:

- Loss of foraging habitat;
- Disturbance of roosting sites;
- Unregulated shooting; and
- Electrocution on powerlines.

The rezoning and future development of the Subject Property is not expected to disturb any Greyheaded Flying-fox roosting site or any significant foraging habitat areas. During the course of the field survey, this species was not recorded utilising the Subject Property or Study Area

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Expected impact on Grey-headed Flying-fox

Habitat potentially available for the foraging needs of the Grey-headed Flying-fox occurs within the Subject Property or Study Area. No known roosting camps are present within, or near, the Subject Property. Given the small area of vegetation to be removed, the Proposal is not considered to have a significant impact on the local status of the Grey-headed Flying Fox.

It is NOT considered that the Proposal would have a significant impact on the threatened Greyheaded Flying-fox, its population or habitats. Therefore, the preparation of a Species Impact Statement that further considers the impacts of the Proposal on this species is NOT REQUIRED.

4 **RECOMMENDATIONS**

The following recommendations are made with respect of conserving the native flora and fauna within the Subject Property at 177 Wright Road, Castle Hill

4.1 FLORA

- 1. Any future development of the Subject Property should endeavour to retain as much native vegetation as possible, in particular the retention of mature canopy trees which provide both local habitat and linkages with other bushland in the Cattai Creek Corridor.
- 2. Undertake a noxious weed control program on the eastern slopes immediately. Remove thickets of woody weeds (Lantana, Cestrum and Privet) as well as strangling vines (Madeira vine) and highly invasive grasses such as Pampas Grass. The control of noxious weeds is the legal responsibility of the landowner. Rehabilitate these slopes by planting with locally indigenous native species.
- 3. Control any potential impact of the Proposal on the local hydrology of the area such that there is no potential for altered drainage regimes, erosion or siltation to adversely affect local watercourse or the native vegetation communities which occur in the Subject Property.
- 4. Carry out pre-construction weed control and around all perimeters of the Study Area (the area site most likely to be impacted by any future development), ensure machinery hygiene, and control runoff from the flat central area to reduce the potential for damage to healthy bushland communities in the adjoining Castle Hill STP.
- 5. Giving consideration to the bushfire hazard (see BCBHS report), maintain the bushland on the eastern and western parts of the Subject Property in a fuel-reduced state via regular slashing.
- 6. In developing any future landscape design for the Property (and within the constraints of the Bushfire Hazard Report), utilise predominately local native species, or where introduced species are included, ensure that they are not listed as 'environmental weeds' by THSC.

4.2 FAUNA

At least one hollow-bearing tree was located within the Study Area during the field survey. It is recommended that prior to any future clearing to facilitate development the site be inspected before the commencement of works by Council staff (i.e. Reserve Bushland Officer). If any additional hollow-bearing or other habitat trees are located, the following procedure should be followed:

- 1. Where applicable and safe from public areas and walkways, all mature hollow-bearing trees within the Study Area should be retained.
- 2. Should a hollow-bearing tree require removal, the following method should be adopted:

- a. Clear all vegetation from around these plants.
- b. Remove the hollow-bearing tree three (3) days after all other plants have been cleared.
- c. Prior to its removal, the hollow-bearing tree should be knocked several times, thereby alerting any possible sheltering animals to the pending threat. Previous studies have shown that the knocking of trees has provided any sheltering animals with the opportunity to flee the site prior to the trees removal.
- d. Once the tree has been investigated and no animals observed exiting the plant or "sitting" at the entrance to any obvious hollows the tree should be felled.
- e. Where animals are observed at the hollows entrances, the tree should be left overnight and again checked in the manner described above the following day.
- f. Once felled, the tree hollows should be checked for any sheltering animals, with any injured individuals being removed and taken to a local veterinarian or wildlife carer for treatment.
- g. Non-injured individuals should be relocated locally into adjacent areas of bushland.
- 3. If hollow-bearing branches are removed, a replacement habitat should be created either by reattaching the hollow branch back to the tree or one nearby or installing a suitable nest box.
- 4. Prior to clearing for any future development, a targeted search should be made for the vulnerable Cumberland Land Snail. Should any individuals be located, these should be carefully translocated in a safe site in nearby bushland.
- 5. If and when tree removal is undertaken, an officer from WIRES should be asked to attend the site for the duration of works. If any native animals are dislocated by these works, WIRES will be able to secure the individuals and translocate to another habitat.
- 6. Prior to any clearing taking place on the western boundary (in particular) it is recommended that a supplementary search for the Cumberland Land Snail be undertaken. Any such search should coincide with periods of light rain.

Note: when removing large trees, it is usually recommended that these be left on-site to provide habitat for reptiles and other small native fauna. However, given the close proximity of residential development to the reserve, the need to provide for bushfire safety must be considered. The decision to remove or leave timbers on-site should be referred to Council's Bushfire Safety Officer.

5 CONCLUSION & RECOMMENDATIONS

The native vegetation in the Study Area is concentrated along the western and eastern boundaries, with a small area located at the northern end of the Property. The plant community is described as **Sydney Hinterland Transition Woodland**, a community which is not currently listed under the environmental legislation.

The fringing vegetation around the central cleared and grassed area comprises individual and small stands of native canopy trees with only minimal understorey present. The bushland on the eastern slopes adjoining the Castle Hill STP is badly degraded and support dense stands of Privet, Lantana and other noxious weeds. The control of noxious weeds on private property is the responsibility of the landowner and a program of weed control should be undertaken at the earliest possible time.

No endangered ecological community and no threatened flora species were recorded during the current field investigations, and therefore there are no flora constraints to the proposed rezoning and future development the Subject Property.

However any future development should wherever possible, retain mature canopy trees to provide habitat and local linkages for native wildlife. Any future development on the Subject Property must also take the protection of bushland downslope in the Castle Hill STP into account and appropriate strategies designed to control stormwater runoff, soil erosion and other impacts of development.

In contrast, four (4) threatened fauna species (NSW TSC Act) were recorded utilising the resources of the Study Area during recent site investigations: **Grey-headed Flying-fox, Eastern False Pipistrelle, Powerful Owl and Cumberland Land Snail**. One of these, the Grey-headed Flying Fox is also listed under the Commonwealth EPBC Act.

Assessments of Significance for each of these fauna species have been carried out, but only the Assessment undertaken for the Cumberland Land Snail considered the impact of any future development to be 'significant', thus requiring further consideration through the preparation of a Species Impact Statement.

While the Proposal to rezone the Subject Property does not *in itself*, trigger a Species Impact Statement for the Cumberland Land Snail, the preparation of such a document will possibly be a requirement for any future development of the Subject Property.

6 **BIBLIOGRAPHY**

Australian Museum (2009). Faunanet http://www.faunanetgov.au [Accessed April 20010].

- Bannerman, S.M. and Hazelton, P.A. (1990). Soil Landscapes of the Penrith 1:100 000 Sheet Soil Conservation Service of NSW, Sydney.
- Bionet (2008) Search and Map Species http://www.bionet.nsw.gov.au [Accessed September 2009]
- Bureau of Meteorology (2009) Summary of Climate Statistics for Seven Hills Meteorological Station #067026) AWS. http://www.bom.gov.au/climate/averages/tables/cw_066137.shtml [Accessed September 2009]

Churchill, S. (2009) Australian Bats. Reed - New Holland, Frenches Forest, NSW.

Cogger, H. (2000) Reptiles and Amphibians of Australia. Reed Books, Chatswood, NSW.

Cropper, S. (1993). Management of Endangered Plants. CSIRO. Melbourne.

- Department of Environment and Climate Change (2009a). Atlas of NSW Wildlife Database. http://wildlifeatlas.npws.gov.au. [Accessed September 2009] (*now Department of Environment Climate Change & Water)
- Department of Environment and Climate Change (2009b). Threatened species information. http://www.threatenedspecies.environment.nsw.gov.au/index.aspx [Accessed September 2009] (Now DECCW).
- **Department of Primary Industries (2005).** Degradation of Native Riparian Vegetation along Waterways (Primfact Sheet 12) (now Industry and Investment NSW)
- Department of the Environment, Water, Heritage and the Arts (2009). Environment Protection and Biodiversity Conservation Act Online Database. http://www.environment.gov.au/erin/ert/epbc/index.html [Accessed September 2009].
- Frith, H.J. ed. (1997). Complete Book of Australian Birds. Readers Digest, Surry Hills.
- Harden, G. (Ed) (1992, 1993, 2000 & 2002). Flora of New South Wales Vols. 1 (2nd ed.), 2 (2nd ed.), 3 and 4. NSW University Press, Kensington.
- James, T., McDougall, L. & Benson, D. (1999). Rare Bushland Plants of Western Sydney. Royal Botanic Gardens, Sydney.
- Keith, D (2004). Ocean Shores to Desert Dunes. NSW Department of Environment, Conservation & Climate Change, Hurstville

- Marchant S and Higgins PJ (1990). Handbook of Australian, New Zealand and Antarctic Birds Volume 3. Oxford University Press, Melbourne.
- NSW Department of Primary Industry (2008) Noxious Weed Declarations. http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/noxweed [Accessed September 2009]

NSW Government (2007). BioNet http://www.bionetnsw.gov.au/. [Accessed September 2009].

- NSW National Parks and Wildlife Service NSW (1997). Western Sydney Urban Bushland Biodiversity Study. National Parks and Wildlife Service, Hurstville (now DECCW)
- NSW National Parks and Wildlife Service NSW (2004). Endangered Ecological Community Information. <u>http://www.environment.nsw.gov.au/resources/nature</u>. [Accessed September 2009] (Now DECCW).
- NSW Scientific Committee (Various dates). *Final Determinations* http://www.nationalparks.nsw.gov.au/npws.nsf/Content/List+of+Scientific+Committee+determi nations [Accessed September 2009].
- Parsons, H., K. French and R. E. Major (2003). The influence of remnant bushland on the composition of suburban bird assemblages in Australia. Landscape and Urban Planning, Volume 66, Issue 1, 15 December 2003, Pages 43-56
- PlantNET The Plant Information Network System of Botanic Gardens Trust, Sydney, Australia (Version 2.0). Available at http://plantnetrbgsyd.nsw.gov.au/
- Slater, P., P. Slater and R. Slater (2005). The Slater Field Guide to Australian Birds. Reed New Holland, Sydney.

Strahan, R. Ed. (1995). The Mammals of Australia. Reed Books, Chatswood.

- Tozer, M.G., Turner, K., Simpson, C., Keith, D.A., Beukers, P., MacKenzie, B., Tindall, D. & Pennay, C. (2006). Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands. Version 1.0. Unpublished Report for NSW Department of Environment and Climate Change, Hurstville.
- Triggs, B. (2004). Tracks, Scats and Other Traces: A Field Guide to Australian Mammals. Oxford University Press, Melbourne.
- **Urban Bushland Management Consultants (2003).** Rouse Hill Regional Centre Vegetation Management Plan for the Caddies Creek Environmental Corridor. Unpublished report prepared for Lend Lease.
- **Urban Bushland Management Consultants (2003).** Species Impact Statement for Detention Basin 55 and Roundabout, Green Road Kellyville. Unpublished report prepared for Baulkham Hills Shire



- **UBM Ecological Consultants (2007).** Review of Environmental Factors for Two Proposed Cycleway Links between Wrights Road & President Road and under Samantha Riley Drive, Kellyville. Unpublished report prepared for Baulkham Hills Shire Council
- **UBM Ecological Consultants (2008).** Review of Environmental Factors for a Proposed Cycleway Link in Fred Caterson Reserve. Unpublished report prepared for Baulkham Hills Shire Council
- **UBM Ecological Consultants (2009).** Flora and Fauna Survey and Management Recommendations for Bushland in the Castle Hill STP, Castle Hill. Unpublished report prepared for Sydney Water Corporation.
- Wheeler, D. J. B., S. W. L. Jacobs, et al. (2002). *Grasses of New South Wales*. Armidale, University of New England.

7 APPENDICES

Appendix 1: Indigenous Flora List for 177 Wrights Road, Castle Hill

FAMILY	SPECIES			AREA/2	ZONE
DICOTYLEDONS	}		1	2	3
Apiaceae	Centella asiatica		V	v	
Apiaceae	Platysace linearifolia				v
Apiaceae	Xanthosia pilosa	Woolly Xanthosia			V
Araliaceae	Polyscias sambucifolia	Elderberry Panax	-		V
Asteraceae	Ozothamnus diosmifolius	White Dogwood		V	V
Casuarinaceae	Allocasuarina littoralis	Black She oak			v
Convolvulaceae	Dichondra repens	Kidney Weed		v	V
Dennstaedtiaceae	Pteridium esculentum	Bracken	-	V	V
Dilleniaceae	Hibbertia aspera	Rough Guinea Flower	-		
Epacridaceae	Brachyloma daphnoides	Daphne Heath	-		V
Epacridaceae	Leucopogon juniperinus	Prickly Beard-heath			V
Epacridaceae	Leucopogon muticus	Blunt Beard-heath			V
Epacridaceae	Styphelia laeta				v
Euphorbiaceae	Phyllanthus hirtellus				V
Euphorbiaceae	Poranthera microphylla		-		v
Fabaceae	Glycine clandestina			-	V
Fabaceae	Glycine tabacina		V		
Fabaceae	Gompholobium grandiflorum	Large Wedge Pea			
Fabaceae	Acacia linifolia	Flax-leaved Wattle			-
Fabaceae	Acacia longifolla		v	V	
Fabaceae	Acacia parramattensis	Parramatta Wattle	V	V	
Lindsaeaceae	Lindsaea linearis	Screw Fern			V
obeliaceae	Pratia purpurascens	Whiteroot	-	-	V
Loganiaceae	Mitrasacme polymorpha		-		V
	Angophora costata	Sydney Red Gum	1	V	V
	Eucalyptus punctata			V	v
Myrtaceae	Eucalyptus racemosa	Narrow-leaved Scribbly Gum		V	v
Myrtaceae	Eucalyptus resinifera	Red Mahogany	-		√
Myrtaceae	Eucalyptus sparsifolia	Narrow-leaved Stringybark		V	V
Ayrtaceae	Kunzea ambigua	Tick Bush	+		V
littosporaceae	Billardiera scandens	Appleberry		•	V
littosporaceae	Pittosporum undulatum	Sweet Pittosporum		V	V
roteaceae	Grevillea mucronulata				V

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FAMILY	SPECIES		AREA/ZONE		
Proteaceae	Hakea sericea	Needlebush		V	
Proteaceae	Lomatia silaifolia	Crinkle Bush		٧	
Proteaceae	Persoonia linearis	Narrow-leaved Geebung		٧	
Proteaceae	Petrophile pulchella	Conesticks		V	
Rubiaceae	Pomax umbellata			V	
Rutaceae	Zieria smithii	Sandfly Zieria		٧	
MONOCOTYLEDONS					
Cyperaceae	Lepidosperma laterale			V	
Lomandraceae	Lomandra longifolia	Spiny-headed Mat-rush	V	V	
Oxalidaceae	Oxalis perennans			.v	
Phormiaceae	Dianella caerulea	Blue Flax-lily		٧	
Poaceae	Austrodanthonia caespitosa	Ringed Wallaby Grass		۷	
Роасеае	Imperata cylindrica var. major	Blady Grass	v		
Poaceae	Microlaena stipoides	Weeping Meadow Grass		V	
Poaceae	Themeda australis	Kangaroo Grass	٧		

Key:

1 – House & Gardens

2 - Open Grassland & Treed Southern Boundary

3 - Bushland on Northern Slope



Appendix 2: Introduced Species and Weeds at 177 Wrights Road, Castle Hill

SPECIES	COMMON NAME	ZONE/AREA			NOXIOUS WEED*	ENVIRONMENTAL WEED	
		1	2	3	an da kan da kan bar da bar bar. An		
Woody Weeds							
(Trees)							
Cinnamomum camphora	Camphor laurel			V		V	
Jacaranda mimosifolia	Jacaranda	V					
Ligustrum lucidum	Large-leaf Privet	V	√	V	4		
(Shrubs)	· · · · · · · · · · · · · · · · · · ·						
	Azalea hybrid	V				***************************************	
Camellia sp.	Camellia hybrids	V			·····	*****	
Genista monspessulana	Tree Broom	V				······································	
Cestrum parqui	Green Cestrum		V	V	3		
Lantana camara	Lantana		-	V	5		
Ligustrum sinense	Small-leaf Privet	V	V	V	4		
Limon	Lemon Tree	√		-			
Photinia glabra	Photinia	V					
Podocarpus elatus ?	Plum Pine	V	1				
Pyracantha sp	Firethorn	V				V	
Ricinus communis	Castor Oil Plant		V	V			
Rubus discolor (part of	Blackberry		1		4		
Senna floribunda	Cassia	V	V		······································		
Senna pendula	Cassia	V				V	
Sida rhombifolia	Paddy's Lucerne	V	1	V			
Solanum mauritaneum	Tobacco Tree		V	V		√	
Herbaceous Weeds							
(Flowering Forbs)							
Agapanthus africanus	Agapanthus	V				٧	
Agave americanum	Century Plant	V	V				
Aloe vera	Aloe	V	V				
Ambrosia sp.	Ragweed	V	V			√	
Bidens pilosa	Cobbler's Pegs	V	V		·····		
Canna indica	Canna/ Indian Shot		V	V			
Chlorophytum comosum	Spider Lily	V				٧	
Circium vulgare	Spear Thistle		V			<u>۷</u>	
- Fumaria sp.	Fumitory	V					
Malva caroliana	Mallow	V	V				
Opuntia sp.	Prickly Pear		V	v	4	<u> </u>	
Plantago lanceolata	Ribwort	V	V				
Pelagonium sp	Geranium	V	<u> </u>				
	Sedum sp.	V			.		

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SPECIES	COMMON NAME	ZONE/AREA			NOXIOUS WEED*	ENVIRONMENTAL WEED	
(Grasses)							
Cortaderia selloana	Pampas Grass	V	V	V	3		
Cynodon dactylon		V	V	V			
Eragrostis curvula	African Love Grass		√	٧.		V	
Paspalum dilatatum		V	V	V			
Paspalum urvillei			V	V			
Pennisetum clandestinum	Kikuyu Grass	√	V	V	A	٧	
Climbers &Scramblers		1					
Acetosa sagittata	Turkey Rhubarb	_	1	V		V	
Anredera cordifolia	Madeira Vine	V	V	٧		٧	
Araujia sericifera	White Moth Plant					V	
Asparagus asparagoides	Bridal Creeper	٧	1	V	5		
Asparagus aethiopicus	Asparagus 'fern'	V		V	*****	٧	
Delairea odorata	Cape Ivy			V	······	√	
Ipomoea indica	Morning Glory	**		V		V	
Lonicera japonica	Japanese	V				٧	
Jasminium polyanthum	Chinese Jasmine	V				V	
Passiflora edulus	Passionfruit	V			······	٧	

*Hawkesbury River County Council Local Control Area Key:

- 1 House & Gardens
- 2 Open Grassland & Treed Southern Boundary
- 3 Bushland on Northern Slope

Appendix 3: List of Fauna Species previously recorded within the Study Region

<u>Kev</u>

- V Vulnerable
- E1 Endangered
- E2 Endangered Population
- M Migratory
- *-- Introduced
- △ Regionally Significant

<u>Sources</u>

TSC Act - Species listed under the Threatened Species Conservation Act 1995

EPBC Act -- Species listed under the *Environment Protection and Biodiversity Conservation Act 1999* DECC (2009) -- NPWS Atlas of NSW Wildlife Search

UBM (2008) – Review of Environmental Factors for a Proposed Cycleway Link in Fred Caterson Reserve (for THSC) Ecotone Ecological Consultants (1998) Flora and Fauna Survey and Bushland management Plan for the Land Owned by Sydney Water Corporation at Castle Hill Sewage Treatment Plant - for Sydney Water Corporation.

SPECIES NAME		TSC ACT	EPBC ACT	DECC (2009)	UBM (2008)	Ecotone (1998)
AMPHIBIA						
Hylidae		1				
Litoria aurea	Green and Golden Bell Frog	E1	v	v		
Litoria dentata	Bleating Tree Frog			V		
Litoria fallax	Eastern Dwarf Tree Frog			v		v
Litoria jervisiensis	Jervis Bay Tree Frog			V		
Litoria latopalmata	Broad-palmed Frog			V		
Litoria littlejohni [∆]	Littlejohn's Tree Frog, Heath Frog		v	v		
Litoria peronii	Peron's Tree Frog			V		V
Litoria phyllochroa	Leaf-green Tree Frog	Τ		v		V
Litoria verreauxii	Verreaux's Frog			v		V
Myobatrachidae						
Crinia signifera	Common Eastern Froglet			V		V
Limnodynastes dumerilii	Eastern Banjo Frog			V		
Limnodynastes peronii	Brown-striped Frog			V		v
Mixophyes balbus	Stuttering Frog, Southern Barred Frog (in Victoria)		v	v		··· .
Mixophyes iteratus	Southern Barred Frog, Giant Barred Frog		E1	v		
Pseudophryne australis	Red-crowned Toadlet	v		٧		
Uperoleia laevigata ^A	Smooth Toadlet			V		<u>,</u>
AVES						
Acanthizidae						
Acanthiza lineata	Striated Thornbill			v	v	 √