



Appendix B

Threatened Species, Populations and Ecological Communities



Table 3 Likelihood of Species or Ecological Community Occurring on Subject Site

Scientific Name	Common Name	TCS Act	EPBC Act	Habitat Association	Likelihood of Occurring
EEC					
*Blue Gum High Forest (EC of the Cumberland Plain)		E	CE	Blue Gum High Forest is a moist, tall open forest community characterised by the canopy species Sydney Blue Gum (<i>Eucalyptus saligna</i>) and Blackbutt (<i>E. pilularis</i>). Forest Oak (<i>Allocasuarina torulosa</i>) and Sydney Red Gum (<i>Angophora costata</i>) also often occur. Moisture preferring species such as Lilly Pilly (<i>Acmena smithii</i>), Sandpaper Fig (<i>Ficus coronata</i>), Soft Bracken (<i>Calochleana dubia</i>) and Maiden Hair (<i>Adiantum aethiopicum</i>) may also occur. Historically restricted to the ridgelines in Sydney's north from Crows Nest to Hornsby, extending west along the ridges between Castle Hill and Eastwood, remaining remnant patches mainly occur in the Hornsby, Ku-ring-gai, and Baulkham Hills LGA's and represent only 4.5% of the original extent of this community (DECC 2008).	Occurs A number of species indicative of this vegetation community were found to occur across the site and within adjacent properties to the south of the site. Species from this community were in both a remnant and maturing regrowth remnant form with high woody weed content in the lower sub canopy and shrub strata. It is deemed that this ecological community is present across the majority of the site in a degraded state.



*Shale/Sandstone transition forest (EC of the Cumberland Plain)	E . . E	Shale/Sandstone Transitional forest occurs on the edges of the Cumberland Plain Western Sydney NSW, where clay soils from the shale rock intergrade with soils from sandstone, or where shale caps overlay sandstone. The boundaries are indistinct, with species composition variable depending on the soil influences. Dominant tree species include Forest Red Gum (<i>Eucalyptus tereticornis</i>), Grey Gum (<i>E. punctata</i>), stringybarks (<i>E. globoides</i>, <i>E. eugenoides</i>) and ironbarks (<i>E. fibrosa</i> and <i>E. crebra</i>). Areas with a low sandstone influence have an understorey that is closer to Cumberland Plain Woodland. 9,950 ha of this community remain intact with the majority occurring in the Hawkesbury, Baulkham Hills, Liverpool, Parramatta, Penrith, Campbelltown and Wollondilly LGA's (DECC 2008).	Does Not Occur Species indicative of this community were largely absent from the site.
*Sydney Turpentine-Ironbark Forest (EC of the Cumberland Plain)	E . . CE	Sydney Turpentine - Ironbark Forest is an open forest occurring on the Cumberland Plain in Western Sydney NSW. Characteristic canopy trees include Turpentine (<i>Syncarpia glomulifera</i>), Grey Gum (<i>Eucalyptus punctata</i>), Grey Ironbark (<i>Eucalyptus paniculata</i>) and Thin-leaved Stringybark (<i>E. eugenoides</i>). In areas of high rainfall (over 1050 mm per annum) Sydney Blue Gum (<i>E. saligna</i>) is more dominant. The shrub stratum is sparse, containing species such as Sweet Pittosporum (<i>Pittosporum undulatum</i>) and Elderberry (<i>Panax Polyscias sambucifolia</i>). Remnants mostly occur in the Baulkham Hills, Hawkesbury, Hornsby, Ku-ring-gai, Parramatta, Ryde, Sutherland and Wollondilly LGA's (DECC 2008).	Occurs Species indicative of this vegetation community were found to occur in the far north east corner of the site. Adjacent land to the north of the site also contains this ecological community. Species from this community were in a mature form with good diversity present. Moderate woody weed infestation in the shrub stratum was evident. It is deemed that this ecological community is present on the site in a degraded state.

FLORA



<i>Acacia bynoeana</i>	Bynoe's Wattle	E	V	This species is endemic to central eastern NSW, and is currently known from only 34 locations, many of which are only 1-5 plants. This species occurs mainly in heath and dry sclerophyll forest on sandy soils, seeming to prefer open, sometimes slightly disturbed sites such as trail margins, road edges, and in recently burnt open patches. This species flowers from September to March, and fruit matures in November (DECC 2008)	Unlikely Limited potential habitat for this species occurs to the far north east of the site and in adjacent bushland, however this species was not recorded on the site during current surveys.
<i>Acacia gordonii</i>		E	E	This species occurs in dry sclerophyll and heaths amongst or within rock platforms on sandstone platforms. It is known from only a few locations. (DECC 2008)	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was largely absent from the site.
<i>Acacia pubescens</i>	Downy Wattle	V	V	This species occurs on alluvium, shales, and at the intergrade between shales and sandstones. This species flowers from August to October with pods maturing in October to December although seed production appears quite low. This is a clonal species and recruitment is more commonly vegetative. (DECC 2008).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was largely absent from the site.
<i>Darwinia biflora</i>		V	V	This species is an erect to spreading shrub to 80 cm high. It occurs in Sydney only on edges of weathered shale-capped ridges, where these intergrade with Hawkesbury sandstone. Associated over storey species include <i>Eucalyptus haemastoma</i>, <i>Corymbia gummifera</i>, and/or <i>Eucalyptus squamosa</i>. The vegetation structure is usually woodland, open forest or scrub-heath (DECC 2008).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was largely absent from the site.



*Darwinia
peduncularis*

V

This species is a more or less horizontal shrub to 1.5 m high, and usually grows on or near rocky outcrops on sandy, well-drained, low nutrient soil over sandstone. It flowers in early spring and although this species is not likely to be capable of vegetative spread it may re-sprout after some disturbance. It is likely to be killed by fire, and is pollinated by honeyeater birds (DECC 2008).

Unlikely

Limited potential habitat for this species occurs to the far north east of the site and in adjacent bushland, however this species was not recorded on the site during current surveys.

*Epacris
purpurascens*
var.
purpurascens

V

This species is an erect shrub 50 to 150 cm high, and occurs in sclerophyll forest, scrubs, and swamps. (NSW Scientific Committee, 2003).

Unlikely

Limited potential habitat for this species occurs across the site and in adjacent bushland; however this species was not recorded on the site during current surveys.

*Eucalyptus
camfieldii*

V

V

Camfield's
Stringybark

This species is usually a mallee to 4 m tall although it can grow to a straggly tree to 9 m. It occurs on poor coastal country in shallow sandy soils overlying Hawkesbury sandstone often in coastal heath mostly on exposed sandy ridges. Stands usually occur near the boundary of tall coastal heaths and low open woodland of the slightly more fertile inland areas. Associated species frequently include stunted species of Narrow-leaved Stringybark (*E. oblonga*), Brown Stringybark (*E. capitellata*) and Scribbly Gum (*E. haemastoma*). (DECC 2008)

Unlikely

This species was not recorded on the site during current surveys. Suitable habitat for this species was absent from the site.



<i>Eucalyptus nicholii</i>	Narrow-leaved Black Peppermint	V	V	This species is a medium-sized tree 15 - 20 m tall with rough, thick, grey-brown bark, which extends to the larger branches. It occurs in dry grassy woodland, on shallow and infertile soils, mainly on granite. This species is widely planted as an urban street tree and in gardens but is quite rare in the wild. It is confined to the New England Tablelands of NSW, where it occurs from Nundle to north of Tenterfield, largely on private property (DECC 2008).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was absent from the site.
<i>Eucalyptus scoparia</i>	Wallangarra White Gum	E	V	This species is a tree to 15 m tall. In NSW it is found on well-drained granitic hilltops, slopes and outcrops, often as scattered trees in open forest and woodland. The main threat to this species is clearing (NPWS Scientific Committee, 2005).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was absent from the site.
<i>Eucalyptus spp. Cattai</i>	<i>Eucalyptus</i> spp. Cattai	E		This species of small tree grows to 4.5 m and is found growing in scrub, heath and low woodland on sandy soils generally on flat ridge tops. The species is known to occur between Colo Heights and Castle Hill, in north west Sydney NSW, though its historical range extended through to central areas of Sydney. (DECC 2008).	Unlikely Limited potential habitat for this species occurs to the far north east of the site and in adjacent bushland, however this species was not recorded on the site during current surveys.



<i>Galium australe</i>	Tangled Bedstraw	E	This species is a straggling or intertwining perennial producing small, white flowers to 2 mm in length, usually during summer. In NSW <i>G. australe</i> is thought to favour moist gullies and slopes on friable, loamy soils with abundant ferns in the understorey in tall forests with overstorey of Blackbutt (<i>Eucalyptus pilularis</i>), Southern Mahogany (<i>E. botryoides</i>), and Turpentine (<i>Syncarpia glomulifera</i>), <i>Eucalyptus tereticornis</i> forest, coastal Banksia shrubland, and <i>Allocasuarina nana</i> heathland. In other States the species is found in a range of near-coastal habitats, including sand dunes, sand spits, shrubland and woodland. Tangled Bedstraw is widespread in Victoria and is also found in Tasmania and South Australia. Once regarded as presumed extinct in NSW, this species was rediscovered in 2002 on the edge of Lake Windemere in Jervis Bay in the ACT. (DECC 2008).	Unlikely Potential habitat for this species occurs across the site and in adjacent bushland; however this species was not recorded on the site or in adjacent bushland areas during current surveys.
<i>Genoplesium baueri</i>	Bauer's Midge Orchid	V	This species is a terrestrial orchid, growing in sparse sclerophyll forest and moss gardens over sandstone. (DECC 2008).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was absent from the site.
<i>Grammitis stenophylla</i>	Narrow-leaf Finger Fern	E	This species of small fern grows in small colonies in moist places, usually near streams, on rocks and in trees in rainforest and moist eucalypt forest. Distribution ranges from eastern Queensland to eastern NSW. In NSW it has been recorded on the south, central and north coasts and as far west as Narrabri. (DECC 2008).	Unlikely Potential habitat for this species occurs across the site and in adjacent bushland; however this species was not recorded on the site or in adjacent bushland areas during current surveys.



<i>Haloragodendron lucasii</i>	E	E	This species of shrub is confined to a very narrow distribution on the north shore of Sydney. It is found within dry sclerophyll forest on moist sandy loam soils in sheltered aspects, and on gentle slopes below cliff-lines near creeks in low open woodland. It seems to prefer high soil moisture and relatively high soil-phosphorus levels. Flowering occurs from August to November with fruits appearing from October to December. <i>H. lucasii</i> has demonstrated an ability to resprout from its rootstock, and is a highly clonal species. (DECC 2008).	Unlikely Limited potential habitat for this species occurs to the far north east of the site and in adjacent bushland, however this species was not recorded on the site during current surveys.
<i>Hibbertia superans</i>	E	E	This species occurs on sandstone ridge tops often near the shale/sandstone boundary. It occurs both in open woodland and heath land, and appears to prefer open disturbed areas, such as tracksides. This species is highly sensitive to both frequent and infrequent fire and other disturbance regimes (DECC 2008).	Unlikely Limited potential habitat for this species occurs to the far north east of the site and in adjacent bushland, however this species was not recorded on the site during current surveys.
<i>Leptospermum deanei</i>	V	V	This species is an erect shrub to 5 m tall with bark that peels in long strips. It is found only in the Sydney area and occurs in woodland on lower hill slopes or near creeks in riparian scrub or woodland on sandy alluvial soil or sand over sandstone (DECC 2008).	Unlikely Limited potential habitat for this species occurs across the site and in adjacent bushland; however this species was not recorded on the site or in adjacent bushland areas during current surveys.
<i>Leucopogon fletcheri subsp fletcheri</i>	E		This species of shrub grows to 1 m and occurs in dry eucalypt woodland or shrubland on clayey lateritic soils, generally on flat or gently sloping terrain along ridges and spurs between St Albans and Annangrove in western Sydney, within the Hawkesbury, Baulkham Hills and Blue Mountains LGA's. Flowering occurs from August to September, with fruiting occurring in October. (DECC 2008).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was absent from the site.



<i>Melaleuca deanei</i>	Deane's Paperbark	V	V	This species is a shrub to 3 m high, with fibrous papery bark. It occurs in two distinct areas, in the Ku-ring-gai / Berowra and Holsworthy/Wedderburn areas. There are also more isolated occurrences at Springwood in the Blue Mountains, Wollemi National Park, Yalwal (west of Nowra), and Central Coast (Hawkesbury River) areas. It grows on sandstone and flowers in summer (DECC 2008).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was absent from the site.
<i>Persoonia hirsuta</i>	Hairy Geebung	E	E	This species is a variable spreading shrub found on sandy soils in dry sclerophyll open forest, woodland and heath on sandstone in the Blue Mountains, Southern Highlands, and Sydney Coastal regions of NSW. (DECC 2008).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was absent from the site.
<i>Persoonia mollis</i> subsp. <i>maxima</i>		E	E	Highly restricted, known only from the Hornsby Heights - Mt Colah area north of Sydney, <i>P. mollis</i> subsp. maxima occurs in sheltered aspects of deep gullies or on the steep upper hillsides of narrow gullies on Hawkesbury Sandstone. These habitats support relatively moist, tall forest vegetation communities often with warm temperate rainforest influences. Associated species: Smooth Barked Apple (<i>Angophora costata</i>), Red Sydney Peppermint (<i>Eucalyptus piperita</i>), Red Bloodwood (<i>Corymbia gummifera</i>), Turpentine (<i>Syncarpia glomulifera</i>), Coachwood (<i>Ceratopetalum apetalum</i>), and Black Wattle (<i>Callicoma serratifolia</i>). (DECC 2008).	Unlikely Potential habitat for this species occurs across the site and in adjacent bushland; however this species was not recorded on the site or in adjacent bushland areas during current surveys.
<i>Pimelea curviflora</i> var. <i>curviflora</i>		V	V	This species is a much-branched subshrub confined to the coastal areas between northern Sydney and Maroota in Sydney's northwest. It occurs on shaley / lateritic soils over sandstone transition soils on ridge tops and upper slopes amongst woodlands. It has an inconspicuous cryptic habitat and often grows amongst dense grasses and sedges. (DECC 2008).	Unlikely Limited potential habitat for this species occurs to the far north east of the site and in adjacent bushland, however this species was not recorded on the site during current surveys.



<i>Pimelea spicata</i>	Spiked Rice Flower	E	E	This species of small spreading shrub occurs within undulating substrates derived from Wianamatta Shale on well-structured clay soils, within the Cumberland Plain and Illawarra regions. It is associated with Grey Box (<i>Eucalyptus moluccana</i>) and Ironbark (<i>E. crebra</i>, <i>E. fibrosa</i>) within the Cumberland Plain, and in Coast Banksia open woodland within the Illawarra regions. (DECC 2008).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was absent from the site.
<i>Pomaderris prunifolia</i>	<i>Pomaderris prunifolia</i> (Endangered Population)	EP		This species of shrub grows to 1 - 3 metres high, whose stems have distinct rusty stellate hairs. This endangered population is known from only three sites within the listed local government areas, at Rydalmere, within Rookwood Cemetery and at The Crest of Bankstown. At Rydalmere it occurs along a road reserve near a creek, among grass species on sandstone. At Rookwood Cemetery it occurs in a small gully of degraded Cooks River / Castlereagh Ironbark Forest on shale soils. (DECC 2008).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was absent from the site.
<i>Syzigium paniculatum</i>	Magenta Lilly Pilly	V	V	This species is a small to medium rainforest tree, found only in NSW in a narrow linear coast strip from Bulahdelah to Conjola State Forest. (DECC 2008).	Unlikely This species was not recorded on the site during current surveys. Suitable habitat for this species was absent from the site.
<i>Tetratheca glandulosa</i>		V		This species is known to inhabit heaths and scrubs, woodlands, open woodlands and forest associated with shale / sandstone transition habitat where shale-cappings occur over sandstone. (DECC 2008).	Unlikely Potential habitat for this species occurs across the site and in adjacent bushland; however this species was not recorded on the site or in adjacent bushland areas during current surveys.