

## Appendix C

# Results of Threatened Species Searches

**Table 1 Threatened Fauna Species**

Species Name	Status	General Habitat Requirements/Comment	Potential to Occur in M2 corridor
<b>Birds</b>			
(Australian) Painted Snipe <i>Rostratula benghalensis australis</i>	Vulnerable (EPBC Act) Endangered (TSC Act)	Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds (DEC, 2005).	Low – inappropriate habitat
Australian Bittern <i>Botaurus poiciloptilus</i>	Vulnerable (TSC Act)	Widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes ( <i>Typha</i> spp.) and spikerushes ( <i>Eleocharis</i> spp.). Hides during the day amongst dense reeds or rushes. Feeding platforms may be constructed over deeper water from reeds trampled by the bird; platforms are often littered with prey remains (DEC, 2005).	Low to moderate
Barking Owl <i>Ninox connivens</i>	Vulnerable (TSC Act)	Inhabits eucalypt woodland, open forest, swamp woodlands and, especially in inland areas, timber along watercourses. Denser vegetation is used occasionally for roosting (DEC, 2005).	Low to moderate
Black Bittern <i>Ixobrychus flavicollis</i>	Vulnerable (TSC Act)	Wide distribution, from southern NSW north to Cape York and along the north coast to the Kimberley region. In NSW, records of the species are scattered along the east coast, with individuals rarely being recorded south of Sydney or inland. Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves (DEC, 2005).	Low
Black-necked Stork <i>Ephippiorhynchus asiaticus</i>	Endangered (TSC Act)	Lakes, swamps, freshwater pools and mangroves. Nests in trees or large bushes, often over swamps (DEC, 2005).	Low – occasional vagrant
Black-tailed Godwit <i>Limosa limosa</i>	Vulnerable (TSC Act)	Primarily a coastal species. Usually found in sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats. Further inland, it can also be found on mudflats and in water less than 10 cm deep, around muddy lakes and swamps. Individuals have been recorded in wet fields and sewerage treatment works (DEC, 2005).	Low to moderate – seasonal migrant.

Species Name	Status	General Habitat Requirements/Comment	Potential to Occur in M2 corridor
Cotton Pygmy-Goose <i>Nettapus coromandelianus</i>	Endangered (TSC Act)	Occurs in freshwater lakes, lagoons, swamps and dams, particularly those vegetated with waterlilies and other floating and submerged aquatic vegetation. The Cotton Pygmy-Goose uses standing dead trees with hollows close to water for roosting and breeding (DEC, 2005).	Low – occasional vagrant
Gang-gang Cockatoo <i>Callocephalon fimbriatum</i>	Vulnerable (TSC Act)	In summer, the species is generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In winter, may occur at lower altitudes in drier more open eucalypt forests and woodlands, and often found in urban areas (DEC, 2005).	High – recorded in the M2 corridor
Glossy Black-cockatoo <i>Calyptorhynchus lathami</i>	Vulnerable (TSC Act)	Coastal forest and open inland woodland. Feeds primarily on <i>littoralis</i> or <i>Allocasuarina torulosa</i> (DEC, 2005).	Moderate
Little Lorikeet <i>Glossopsitta pusilla</i>	Vulnerable (TSC Act)	Found in open forests and woodlands, particularly where there are large flowering eucalypts. This species is also a mallee specialist (DEC, 2005).	Low
Osprey <i>Pandion haliaetus</i>	Vulnerable (TSC Act) Migratory (EPBC Act)	Found around the Australian coast line, except for Victoria and Tasmania. They are common around the northern coast, especially on rocky shorelines, islands and reefs. The species is uncommon to rare or absent from closely settled parts of south-eastern Australia (DEH 2005). Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. Feed on fish over clear, open water. Nests are made high up in dead trees or in dead crowns of live trees, usually within 1 km of the ocean (DEC, 2005).	Low – inappropriate habitat
Pink Robin <i>Petroica rodinogaster</i>	Vulnerable (TSC Act)	Inhabits rainforest and tall, open eucalypt forest, particularly in densely vegetated gullies.	Low to moderate
Powerful Owl <i>Ninox strenua</i>	Vulnerable (TSC Act)	Eucalypt forests along the Great Dividing Range, preferring tall wet sclerophyll forests, where 800-1000 ha territories centre on densely vegetated gullies (DEC, 2005).	Moderate to high
Regent Honeyeater <i>Anthochaera phrygia</i> (syn. <i>Xanthomyza phrygia</i> )	Endangered (EPBC Act) Endangered (TSC Act)	The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes (DEC, 2005, DEH, 2005).	Moderate – marginal habitat possible occasional visitor.

Species Name	Status	General Habitat Requirements/Comment	Potential to Occur in M2 corridor
Superb Fruit-dove <i>Ptilinopus superbus</i>	Vulnerable (TSC Act)	Inhabits rainforest and similar closed forests where it forages high in the canopy, eating the fruits of many tree species such as figs and palms. It may also forage in eucalypt or acacia woodland where there are fruit-bearing trees (DEC, 2005).	Low to moderate
Superb parrot <i>Polytelis swainsonii</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Found throughout eastern inland NSW. Inhabit Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest (DEC, 2005).	Low – records of likely aviary escapees outside species natural range. Breeding unlikely.
Swift Parrot <i>Lathamus discolor</i>	Endangered (TSC Act) Endangered (EPBC Act) Migratory (EPBC Act)	Migrates to the Australian south-east mainland between March and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany, Spotted Gum, Red Bloodwood, Mugga Ironbark, and White Box. Commonly used lerp infested trees include Grey Box, Grey Box and Blackbutt (DEC, 2005).	Moderate – marginal habitat possible, seasonal visitor.
<b>Frogs</b>			
Giant Barred Frog <i>Mixophyes iteratus</i>	Endangered (TSC Act) Endangered (EPBC Act)	Forage and live amongst deep, damp leaf litter in rainforests, moist eucalypt forest and nearby dry eucalypt forest. They breed around shallow, flowing rocky streams from late spring to summer (DEC, 2005).	Low – habitat marginal and species not recorded in the CMA sub-regions in which the study area is located. Streams of the study area likely to be too polluted for species to persist.
Giant Burrowing Frog <i>Heleioporus australiacus</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	The Giant Burrowing Frog occurs from the NSW Central Coast to eastern Victoria, but is most common on the Sydney sandstone. It has been found from the coast to the Great Dividing Range. Found in heath, woodland and open forest with sandy soils (DEC, 2005). Usually live along clear, small slowly flowing water courses which traverse plateaus and broad upland gullies. Giant Burrowing Frogs have not been recorded breeding in waters that are even mildly polluted and are adversely affected by small pH changes (NPWS 2001).	Low – no waterways on upland gullies or plateaus within study area. Waterways of the study area moderately to heavily polluted.
Green and Golden Bell Frog <i>Litoria aurea</i>	Vulnerable (EPBC Act) Endangered (TSC Act)	Inhabits marshes, dams and stream-sides, particularly those containing bullrushes ( <i>Typha</i> spp.) or spikerushes ( <i>Eleocharis</i> spp.). Some sites, particularly in the Greater Sydney region occur in highly disturbed areas. Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as <i>Gambusia holbrooki</i> , have a grassy area nearby and diurnal sheltering sites available (DEC, 2005).	Moderate – previously recorded in study area (most recently in 1995) however may be locally extinct.
Red-crowned Toadlet <i>Pseudophryne australis</i>	Vulnerable (TSC Act)	The species occurs in open forests, mostly on Hawkesbury and Narrabeen Sandstones. Shelters under rocks and amongst masses of dense vegetation or thick piles of leaf litter (DEC, 2005).	Moderate to high

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Stuttering Barred Frog <i>Mixophyes balbus</i>	Endangered (TSC Act) Vulnerable (EPBC Act)	Occur along the east coast of Australia from southern Queensland to the north-eastern Victoria. In recent surveys it has only been recorded at three locations south of Sydney. Found in rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range. Outside the breeding season (when occupy streams), adults live in deep leaf litter and thick understorey vegetation on the forest floor. The species depends on freshwater streams and riparian vegetation for breeding and habitation. No records are known from riparian habitat that has been disturbed (DEC, 2005).	Low – species not recorded in the CMA sub-regions in which the study area is located. Streams of the study area likely to be too polluted for species to persist.
<b>Reptiles</b>			
Broad-headed Snake <i>Hoplocephalus bungaroides</i>	Endangered (TSC Act) Vulnerable (EPBC Act)	Largely confined to Triassic and Permian sandstones, including the Hawkesbury, Narrabeen and Shoalhaven groups, within the coast and ranges in an area within approximately 250 km of Sydney. Shelters in rock crevices and under flat sandstone rocks on exposed cliff edges during autumn, winter and spring. Moves from the sandstone rocks to shelters in hollows in large trees within 200 m of escarpments in summer. Within the Pittwater (Part B) sub-catchment area, the species restricted to the most northern areas (DEC, 2005).	Low – species restricted known distribution does not reach the study area.
Rosenberg's Goanna <i>Varanus rosenbergi</i>	Vulnerable (TSC Act)	Found in heath, open forest and woodland. Associated with termites, the mounds of which this species nests in; termite mounds are a critical habitat component (DEC, 2005).	Low to moderate
<b>Molluscs</b>			
Cumberland Land Snail <i>Meridolum corneovirens</i>	Endangered (TSC Act)	Primarily inhabits Cumberland Plain Woodland (an endangered ecological community). This community is a grassy, open woodland with occasional dense patches of shrubs.  Lives under litter of bark, leaves and logs, or shelters in loose soil around grass clumps. Occasionally shelters under rubbish (DECCW, 2009).	Low
<b>Mammals</b>			
Brush-tailed Rock-wallaby <i>Petrogale penicillata</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges facing north (DEC, 2005).	Low – inappropriate habitat and not recorded in the CMA sub-regions of study area.

Species Name	Status	General Habitat Requirements/Comment	Potential to Occur in M2 corridor
Eastern Bentwing-bat <i>Miniopterus schreibersii oceanensis</i>	Vulnerable (TSC Act)	Occur along the east and north-west coasts of Australia. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. Maternity caves have very specific temperature and humidity regimes. At other times of the year, populations disperse within about 300 km range of maternity caves. Cold caves are used for hibernation in southern Australia (DEC, 2005).	Moderate to high
Eastern False Pipistrelle <i>Falsistrellus tasmaniensis</i>	Vulnerable (TSC Act)	Occurs in moist habitats, with trees taller than 20 m. Roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings (DEC, 2005).	Low to moderate
Eastern Freetail-bat <i>Mormopterus norfolkensis</i>	Vulnerable (TSC Act)	Occurs in dry sclerophyll forest and woodland east of the Great Dividing Range. Roosting occurs mainly in tree hollows but will also roost under bark or in man-made structures (DEC, 2005).	Moderate to high
Greater Broad-nosed Bat <i>Scoteanax rueppellii</i>	Vulnerable (TSC Act)	Occurs in woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Usually roosts in tree hollows; however, it has also been found in buildings (DEC, 2005).	Moderate to high
Grey-headed Flying-fox <i>Pteropus poliocephalus</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy (DEC, 2005).	High – recorded
Large-eared Pied Bat, Large Pied Bat <i>Chalinolobus dwyeri</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Found in well-timbered areas containing gullies mainly in areas with extensive cliffs and caves. Frequents low to mid-elevation dry open forest and woodland close to these features. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin ( <i>Hirundo ariel</i> ) (DEC, 2005).	Moderate to high – occasional visitor.
Large-footed Myotis <i>Myotis adversus</i>	Vulnerable (TSC Act)	Generally roost in groups of 10-15 close to water in caves, mine shafts, hollow-bearing trees, storm-water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface (DEC, 2005).	Moderate to high

Species Name	Status	General Habitat Requirements/Comment	Potential to Occur in M2 corridor
Long-nosed Potoroo <i>Potorous tridactylus tridactylus</i>	Vulnerable (EPBC Act – SE mainland)	Inhabits coastal heaths and dry and wet sclerophyll forests. Dense understorey with occasional open areas is an essential part of habitat, and may consist of grass-trees, sedges, ferns or heath, or of low shrubs of tea-trees or melaleucas. A sandy loam soil is also a common feature (DEC, 2005).	Low – inappropriate habitat and not recorded in the CMA sub-regions of study area.
Southern Brown Bandicoot (eastern) <i>Isodon obesulus obesulus</i>	Endangered (TSC Act) Endangered (EPBC Act)	It is found in south-eastern NSW, east of the Great Dividing Range south from the Hawkesbury River. They are generally only found in heath or open forest with a healthy understorey on sandy or friable soils (DEC, 2005).	Low – small areas of potential habitat exists for this species in the locality however there are no records from the study area, Lane Cove NP, Bidjigal Reserve or other contiguous areas.
Spot-tailed Quoll <i>Dasyurus maculatus</i>	Vulnerable (TSC Act) Endangered (EPBC Act)	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock crevices, boulder fields and rocky-cliff faces as den sites. Females occupy home ranges up to about 750 hectares and males up to 3500 hectares; usually traverse their ranges along densely vegetated creeklines (DEC, 2005; DEH, 2005).	Low – not recorded in the bushland surrounding the study area which is fragmented and unlikely to be of sufficient size to support a resident population.
Yellow-bellied Glider <i>Petaurus australis</i>	Vulnerable (TSC Act)	The species occurs in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Denning occurs in hollows of large trees (DEC, 2005).	Low to moderate
Yellow-bellied Sheath-tail-bat <i>Saccolaimus flaviventris</i>	Vulnerable (TSC Act)	Roosts in tree hollows and buildings; and in treeless areas they are known to utilise mammal burrows. Forages in most habitats across its very wide range, with and without trees (DEC, 2005).	Moderate
<b>Fish</b>			
Australian Grayling <i>Prototroctes maraena</i>	Vulnerable (EPBC Act) Protected (FM Act)	Australian grayling occur in freshwater streams and rivers (NSW DPI 2006). Chiefly occurs in clear gravelly streams with a moderate flow, as well as estuarine areas (DEC, 2005).	Low – habitat inappropriate.
Macquarie Perch <i>Macquaria australasica</i>	Endangered (EPBC Act) Endangered (FM Act)	Found in the Murray-Darling Basin (particularly upstream reaches) of the Lachlan, Murrumbidgee and Murray rivers, and parts of south-eastern coastal NSW, including the Hawkesbury/Nepean and Shoalhaven catchments (NSW DPI, 2005).	Low – streams of the study area not appropriate as species habitat.

Species Name	Status	General Habitat Requirements/Comment	Potential to Occur in M2 corridor
<b>Migratory Species</b>			
Black-faced Monarch <i>Monarcha melanopsis</i>	Migratory	Found along the coast of eastern Australia. Found in rainforests, eucalypt woodlands, coastal scrub and damp gullies and in more open woodland when migrating. Resident in the north of its range, but is a summer breeding migrant to coastal south-eastern Australia, arriving in September and returning northwards in March (Australian Museum, 2005).	Moderate – potential breeding habitat for this species is considered to be found throughout the core bushland areas in the locality of the project. This species is considered unlikely to rely on the affected areas as breeding or foraging or roosting habitat.
Rainbow Bee-eater <i>Merops ornatus</i>	Migratory	Widely distributed throughout Australia (SPRAT, 2005). Occurs mainly in open forests and woodlands, shrublands, and in various cleared or semi-cleared habitats, including farmland and areas of human habitation (SPRAT, 1999). The Rainbow Bee-eater has not been formally identified to occur in any threatened ecological communities (DEWHA, 2010).	Moderate – marginal habitat possible occasional visitor.
Rufous Fantail <i>Rhipidura rufifrons</i>	Migratory	The Rufous Fantail is found in northern and eastern coastal Australia, being more common in the north. During migration, it may be found in more open habitats or urban areas. Strongly migratory in the south of its range, it moves northwards in winter (Australian Museum, 2008).	Moderate – potential breeding habitat for this species is considered to be found throughout the core bushland areas in the locality of the project. This species is considered unlikely to rely on the affected areas as breeding or foraging or roosting habitat.
Satin Flycatcher <i>Myiagra cyanoleuca</i>	Migratory	Breeds in south eastern Australia. The species occurs at numerous and widespread sites in eastern Australia (DEWHA, 2010).	Moderate – potential breeding habitat for these species is considered to be found throughout the core bushland areas in the locality of the project. This species is considered unlikely to rely on the affected areas as breeding or foraging or roosting habitat.
White-throated Needletail <i>Hirundapus caudacutus</i>	Migratory	In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains.	Moderate –Habitat present for this aerial species but not affected by the proposed project.



**Table 2 Threatened Flora Species**

Species Name	Status	Habitat Requirements / Comment	Potential to Occur in M2 Corridor
<i>Acacia bynoeana</i> Bynoe's Wattle	Endangered (TSC Act) Vulnerable (EPBC Act)	Occurs in heath or dry sclerophyll forest on sandy soils. Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches. Associated overstorey species include Red Bloodwood, Scribbly Gum, Parramatta Red Gum, Saw Banksia and Narrow-leaved Apple (DEC, 2005).	Moderate – a small amount of potential habitat for this species occurs within the M2 corridor.
<i>Acacia pubescens</i> Downy Wattle	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Concentrated around the Bankstown-Fairfield-Rookwood area and the Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon. Occurs on alluviums, shales and at the intergrade between shales and sandstones. The soils are characteristically gravelly soils, often with ironstone. Occurs in open woodland and forest, in a variety of plant communities, including Cooks River/Castlereagh Ironbark Forest, Shale/Gravel Transition Forest and Cumberland Plain Woodland (DEC, 2005).	Low – all areas that may previously have supported potential habitat for the species are highly modified through earthworks and weed invasion.
<i>Caladenia tessellata</i> Tessellated Spider Orchid	Endangered (TSC Act) Vulnerable (EPBC Act)	Known from the Sydney area (old records), Wyong, Ulladulla and Braidwood in NSW. Generally found in grassy sclerophyll woodland on clay loam or sandy soils, though the population near Braidwood is in low woodland with stony soil (DEC, 2005).	Low – species not recently recorded in region and habitat of study area is marginal at best.
<i>Callistemon linearifolius</i>	Vulnerable (TSC Act)	Grows in dry sclerophyll forest on the coast and adjacent ranges, chiefly from Georges River to the Hawkesbury River. This shrub occurs most commonly within ecological communities associated with eucalypts, wattles and banksias and in areas of low soil fertility (DEC, 2005).	Moderate
<i>Camarophyllopsis kearneyi</i>	Endangered (TSC Act)	Known only from its type locality in Lane Cove Bushland Park in the Lane Cove local government area in the Sydney metropolitan region. Known only from its type locality in Lane Cove Bushland Park in the Lane Cove local government area in the Sydney metropolitan region.	Low
<i>Cryptostylis hunteriana</i> Leafless Tongue Orchid	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Does not appear to have well defined habitat preferences and is known from a range of communities, including swamp-heath and woodland. The larger populations typically occur in woodland dominated by Scribbly Gum, Silvertop Ash, Red Bloodwood and Black Sheoak (DEC, 2005).	Low – species recorded only once from the region habitat of study area is marginal.
<i>Darwinia biflora</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Occurs on the edges of weathered shale-capped ridges, where these intergrade with Hawkesbury Sandstone. Associated overstorey species include <i>Eucalyptus haemastoma</i> , <i>Corymbia gummifera</i> and/or <i>E. squamosa</i> . The vegetation structure is usually woodland, open forest or scrub-heath (DEC, 2005).	Moderate to high – Possible in eastern half of M2 Corridor though not recorded during field surveys.

Species Name	Status	Habitat Requirements / Comment	Potential to Occur in M2 Corridor
<i>Darwinia peduncularis</i>	Vulnerable (TSC Act)	Often grows on or near rocky outcrops on sandy, well drained, low nutrient soil over sandstone. Resprouts on disturbed sites bush margins (DEC, 2005).	Low
<i>Deyeuxia appressa</i>	Endangered (TSC Act) Endangered (EPBC Act)	Was first collected in 1930 at Herne Bay, Saltpan Creek, off the Georges River, south of Bankstown. Was then collected in 1941 from Killara, near Hornsby. Has not been collected since and may now be extinct. Given that <i>D. appressa</i> hasn't been seen in over 60 years, almost nothing is known of the species' habitat and ecology. Flowers spring to summer and is mesophytic (grows in moist conditions) (DEC, 2005).	Low – not recorded for many years. Moist habitats within study area are chiefly highly disturbed.
<i>Epacris purpurascens</i> var. <i>purpurascens</i>	Vulnerable (TSC Act)	The species is commonly found associated with open eucalypt forest to 20 m tall, with an open subcanopy of sheoaks and wattles. The understorey includes a usually sparse mixed layer of sclerophyllous and mesophyllous shrubs stratum and continuous grassy groundcover (DEC, 2005).	High – recorded.
<i>Eucalyptus camfieldii</i> Camfield's Stringybark	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Restricted distribution in a narrow band with the most northerly records in the Raymond Terrace Area south to Waterfall. Localised and scattered distribution includes sites at Norah Head (Tuggerah Lakes), Peats Ridge, Mt Colah, Elvina Bay Trail (West Head), Terrey Hills, Killara, North Head, Menai, Wattamolla and a few other sites in Royal National Park. Poor coastal country in shallow sandy soils overlying Hawkesbury sandstone. Coastal heath mostly on exposed sandy ridges. Occurs mostly in small scattered stands 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 <i>E. oblonga</i> Narrow-leaved Stringybark, <i>E. capitellata</i> Brown Stringybark and <i>E. haemastoma</i> Scribbly Gum (DEC, 2005).	Low to moderate – few records and little, if any suitable habitat present.
<i>Eucalyptus nicholii</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	This species is rare and grows in dry grassy woodland, on shallow and infertile soils, mainly on granite (DEC, 2005).	Low – non-local species, specimens planted.
<i>Eucalyptus scoparia</i>	Endangered (TSC Act) Vulnerable (EPBC Act)	This species grows in open eucalypt forests and woodland on well-drained granite hilltops, slopes and rocky outcrops (DEC, 2005).	Low – non-local species, specimens planted.

Species Name	Status	Habitat Requirements / Comment	Potential to Occur in M2 Corridor
<i>Gallium australe</i> Tangled Bedstraw	Endangered (TSC Act)	Once regarded as presumed extinct in NSW, this species is now known from the Towamba Valley near Bega, Lake Yarrunga near Kangaroo Valley, Cullendulla Creek Nature Reserve near Batemans Bay, Conjola National Park, Swan Lake near Swanhaven, and the Big Hole in Deua National Park. It was recorded historically from the Clyde River near Batemans Bay and the Mongarlowe area near Braidwood. The species also occurs beside Lake Windemere in the Australian Capital Territory at Jervis Bay. There is also an outlying record to the north from near Byabarra on the north coast. In NSW Tangled Bedstraw has been found in moist gullies of tall forest, <i>Eucalyptus tereticornis</i> forest, coastal Banksia shrubland, and <i>Allocasuarina nana</i> heathland (DEC, 2005).	Low to moderate
<i>Genoplesium baueri</i> Bauer's Midge Orchid	Vulnerable (TSC Act)	The species has been recorded from locations between Ulladulla and Port Stephens. About half the records were made before 1960 with most of the older records being from Sydney suburbs including Asquith, Cowan, Gladesville, Longueville and Wahroonga. No collections have been made from those sites in recent years. Currently the species is known from just over 200 plants across 13 sites. The species has been recorded at locations now likely to be within the following conservation reserves: Berowra Valley Regional Park, Royal National Park and Lane Cove National Park. May occur in the Woronora, O'Hares, Metropolitan and Warragamba Catchments Grows in sparse sclerophyll forest and moss gardens over sandstone (DEC, 2005).	Low to moderate
<i>Grammitis stenophylla</i> Narrow-leaf Finger Fern	Endangered (TSC Act)	Occurs in eastern Queensland and eastern NSW. In NSW it has been found on the south, central and north coasts and as far west as Mount Kaputar National Park near Narrabri. Moist places, usually near streams, on rocks or in trees, in rainforest and moist eucalypt forest (DEC, 2005).	Low to moderate
<i>Grevillea caleyi</i> Caley's Grevillea	Endangered (TSC Act) Endangered (EPBC Act)	Restricted to an 8 km square area around Terrey Hills, approximately 20 km north of Sydney. Occurs in three major areas of suitable habitat, namely Belrose, Ingleside and Terrey Hills/Duffys Forest within the Ku-ring-gai, Pittwater and Warringah Local Government Areas. All sites occur on the ridgetop between elevations of 170 to 240 m and, in association with laterite soils and a vegetation community of open forest, generally dominated by <i>Eucalyptus sieberi</i> and <i>E. gummifera</i> . Commonly found in the endangered Duffys Forest ecological community (DEC, 2005).	Low – not recorded in locality and little, if any suitable habitat present.

Species Name	Status	Habitat Requirements / Comment	Potential to Occur in M2 Corridor
<i>Grevillea parviflora</i> subsp. <i>Parviflora</i> Small-flower Grevillea	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Grows in sandy or light clay soils usually over thin shales. Occurs in a range of vegetation types from heath and shrubby woodland to open forest. Found over a range of altitudes from flat, low-lying areas to upper slopes and ridge crests. Often occurs in open, slightly disturbed sites such as along tracks (DEC, 2005).	Low – not recorded in locality and minimal if any habitat present.
<i>Haloragodendron lucasii</i>	Endangered (TSC Act) Endangered (EPBC Act)	Associated with dry sclerophyll forest. Reported to grow in moist sandy loam soils in sheltered aspects, and on gentle slopes below cliff-lines near creeks in low open woodland. Associated with high soil moisture and relatively high soil-phosphorus levels (DEC, 2005).	Low to moderate – minimal, if any potential habitat within M2 corridor.
<i>Hibbertia superans</i>	Endangered (TSC Act)	The species occurs on sandstone ridgetops often near the shale/sandstone boundary. Occurs in both open woodland and heathland, and appears to prefer open disturbed areas, such as tracksides. Highly sensitive to both frequent and infrequent fire and other disturbance regimes (DEC, 2005).	Low
<i>Hygrocybe anomala</i> var. <i>ianhinomarginata</i>	Vulnerable (TSC Act)	The species occurs in gallery warm temperate forests dominated by Lilly Pilly, Grey Myrtle, Cheese Tree and Sweet Pittosporum. They are associated with alluvial sandy soils of the Hawkesbury Soil Landscapes which are naturally low fertility and erodible. This species can also occur on rotten tree substrates include soil, humus, or moss (DEC, 2005).	Low
<i>Hygrocybe aurantipes</i>	Vulnerable (TSC Act)	The species occurs in gallery warm temperate forests dominated by Lilly Pilly, Grey Myrtle, Cheese Tree and Sweet Pittosporum. They are associated with alluvial sandy soils of the Hawkesbury Soil Landscapes which are naturally low fertility and erodible. This species can also occur on rotten tree substrates include soil, humus, or moss (DEC, 2005).	Low
<i>Hygrocybe austropratensis</i>	Endangered (TSC Act)	Only know from type locality at Lane Cove Bushland Park, Lane Cove Local Government Area. Occurs in gallery warm temperate forests dominated by Lilly Pilly, Grey Myrtle, Cheese Tree and Sweet Pittosporum. Associated with alluvial sandy soils of the Hawkesbury Soil Landscapes with naturally low fertility and erodible. Occur as individuals or in groups, terrestrial rarely on wood and only if extremely rotten; substrates include soil, humus, or moss (DEC, 2005).	Low

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<i>Hygrocybe lanecovens</i>	Endangered (TSC Act)	The species occurs in gallery warm temperate forests dominated by Lilly Pilly, Grey Myrtle, Cheese Tree and Sweet Pittosporum. They are associated with alluvial sandy soils of the Hawkesbury Soil Landscapes which are naturally low fertility and erodible. This species can also occur on rotten tree substrates include soil, humus, or moss (DEC, 2005).	Low
<i>Hygrocybe reesia</i>	Vulnerable (TSC Act)	The species occurs in gallery warm temperate forests dominated by Lilly Pilly, Grey Myrtle, Cheese Tree and Sweet Pittosporum. They are associated with alluvial sandy soils of the Hawkesbury Soil Landscapes which are naturally low fertility and erodible. This species can also occur on rotten tree substrates include soil, humus, or moss (DEC, 2005).	Low
<i>Hygrocybe rubronivea</i>	Vulnerable (TSC Act)	The species occurs in gallery warm temperate forests dominated by Lilly Pilly, Grey Myrtle, Cheese Tree and Sweet Pittosporum. They are associated with alluvial sandy soils of the Hawkesbury Soil Landscapes which are naturally low fertility and erodible. This species can also occur on rotten tree substrates include soil, humus, or moss (DEC, 2005).	Low
<i>Lasiopetalum joyceae</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Grows in heath on lateritic to shaley ridgetops of sandstone areas (DEC, 2005).	Low – minimal, if any, potential habitat within M2 corridor. Study area outside of species known range.
<i>Leptospermum deanei</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Woodland on lower hill slopes or near creeks. Sandy alluvial soil or sand over sandstone Occurs in Riparian Scrub – e.g. <i>Tristaniopsis laurina</i> , <i>Baechea myrtifolia</i> ; Woodland – e.g. <i>Eucalyptus haemstoma</i> ; and Open Forest – e.g. <i>Angophora costata</i> , <i>Leptospermum trinervium</i> , <i>Banksia ericifolia</i> (DEC, 2005).	Low – some potential habitat may exist along Devlins Creek though vegetation here is moderately to highly degraded and unlikely to support the species.
<i>Melaleuca deanei</i> Deane's Paperbark	Vulnerable (TSC Act) Vulnerable (EPBC Act)	The species grows in wet heath on sandstone (DEC, 2005).	Low to moderate – minimal, if any, potential wet heath habitat occurs within the M2 corridor.
<i>Persoonia hirsuta</i> Hairy Geebung	Endangered (TSC Act) Endangered (EPBC Act)	Found in sandy soils in dry sclerophyll open forest, woodland and heath on sandstone. It is usually present as isolated individuals or very small populations (DEC, 2005).	Moderate – potential habitat present though species not recorded in adjacent bushland valleys.

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<i>Persoonia mollis</i> subsp. <i>maxima</i>	Endangered (TSC Act) Endangered (EPBC Act)	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 (DEC, 2005).	Low-moderate – not recorded in adjacent bushland valleys. Preferred habitat not found within M2 corridor.
<i>Persoonia nutans</i>	Endangered (TSC Act) Endangered (EPBC Act)	Inhabits aeolian and alluvial sediments and occurs in a range of sclerophyll forest and woodland vegetation communities, with the majority of individuals occurring within Agnes Banks Woodland or Castlereagh Scribbly Gum Woodland (DEC, 2005).	Low
<i>Pimelea curviflora</i> var. <i>curviflora</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Occurs on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes amongst woodlands (DEC, 2005).	Moderate – species recorded at unspecified location near the M2 in 1992 EIS however not located in M2 corridor during recent studies.
<i>Pomaderris</i> <i>prunifolia</i>	Endangered population in the Paramatta, Auburn, Strathfield and Bankstown LGAs	Identified 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 (DEC, 2005).	Low – known from only three sites that are not within the study area
<i>Prostanthera</i> <i>marifolia</i>	Critically Endangered (TSC Act) Extinct (EPBC Act)	Previously recorded from the Sydney harbour region and was presumed extinct. All attempts to recollect this species were unsuccessful until 2001. Found in woodland dominated by <i>Eucalyptus sieberi</i> and <i>Corymbia gumnifera</i> . In deeply weathered clay soil with ironstone nodules (DEC, 2005).	Low – areas near M2 where species previously recorded are now developed.  Preferred habitat not found within M2 corridor.
<i>Syzygium</i> <i>paniculatum</i> Magenta Lilly Pilly	Vulnerable (TSC Act) Vulnerable (EPBC Act)	The species occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest. On the central coast Magenta Lilly Pilly occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities (DEC, 2005).	Low to moderate – species is widely cultivated

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<i>Tetratheca glandulosa</i>	Vulnerable (TSC Act) Vulnerable (EPBC Act)	Associated with shale-sandstone transition habitat where shale-cappings occur over sandstone, with associated soil landscapes such as Lucas Heights, Gymea, Lambert and Faulconbridge. Topographically, the plant occupies ridgetops, upper-slopes and to a lesser extent mid-slope sandstone benches. Soils are generally shallow, consisting of a yellow, clayey/sandy loam. Stony lateritic fragments are also common in the soil profile on many of these ridgetops. Vegetation structure varies from heaths and scrub to woodlands/open woodlands, and open forest. Vegetation communities correspond broadly to Benson & Howell's Sydney Sandstone Ridgetop Woodland (Map Unit 10ar). Common woodland tree species include: <i>Corymbia gummifera</i> , <i>C. eximia</i> , <i>Eucalyptus haemastoma</i> , <i>E. punctata</i> , <i>E. racemosa</i> , and/or <i>E. sparsifolia</i> , with an understorey dominated by species from the families Proteaceae, Fabaceae, and Epacridaceae (DEC, 2005).	Moderate – a small amount of potential habitat for this species is present within the M2 corridor. Species not recorded within M2 corridor during recent surveys.
<i>Triplarina imbricata</i> Creeping Triplarina	Endangered (TSC Act) Endangered (EPBC Act)	Found only in a few locations in the ranges south-west of Glenreagh and near Tabulam in north-east NSW. Along watercourses in low open forest with Water Gum (DEC, 2005).	Low
<i>Wilsonia backhousei</i> Narrow-leafed Wilsonia	Vulnerable (TSC Act)	This species occurs on the margins of salt marshes and lakes, both coastal and inland (DEC, 2005).	Low

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