ATTACHMENT 3: EME LEVELS REPORT

Summary of Estimated RF EME Levels around the proposed Mobile Phone Base Station at Off Durras Drive, Durras

Introduction:

Date 08/05/2006

This report summarises the estimation of maximum cumulative radiofrequency (RF) electromagnetic energy (EME) levels at ground level emitted from the proposed Mobile Phone Base Station antennas at Off Durras Drive Durras. Maximum EME levels estimated are at distances of 5.0, 50.0, 100.0, 200.0, 300.0, 400.0, 500.0 m from the base station. The procedures for making the estimates have been developed by the Australian Radiation Protection And Nuclear Safety Agency (ARPANSA)[1]. These are documented in the ARPANSA Technical Report; "Radiated EME Exposure Levels - Prediction Methodologies" which is available at www.arpansa.gov.au

EME Health Standard

ARPANSA, an agency of the Commonwealth Department of Health has established a Radiation Protection Standard[2] specifying limits for continuous exposure of the general public to RF transmissions at frequencies used by mobile phone base stations. Further information can be gained from the ARPANSA web site.

The Australian Communications Authority (ACA)[3] mandates exposure limits for continuous exposure of the general public to RF EME from mobile phone base stations. Further information can be found at the ACA website www.aca.gov.au/stds_compliance/electromagnetic_radiation/index.htm

Proposed Site Radio Systems

Telstra GSM 900	Telstra GSM 1800	Telstra CDMA 800	

Table of Predicted EME Levels – Proposed

Distance from the antennas at Off Durras Drive bearing 139.56 ˚ (m)	Maximum Cumulative EME Level - All Carriers (% of ACA mandated exposure limits[4])
5	0.003
50	0.029
100	0.038
200	0.23
300	0.13
400	0.076
500	0.049
Maximum EME level 198.32 m, 139.56˚ from the antennas at Off Durras Drive	0.23

Note: This estimation is for the maximum level of RF EME at 1.5m above the ground from the proposed antennas. The estimated levels have been calculated on the maximum mobile phone call capacity anticipated for this site. This estimation does not include possible radio signal attenuation due to buildings and the general environment. The actual EME levels will generally be significantly less than predicted due to path losses and the base station automatically minimising transmitter power to only serve established phone calls[5].

Summary – Proposed Radio Systems

RF EME levels have been estimated from the proposed antennas at Off Durras Drive Durras. The maximum cumulative EME level at 1.5 m above ground level is estimated to be 0.23 % of the ACA mandated exposure limits.

Existing Site Radio Systems

There are currently no cellular radio systems installed at this site.

Reference Notes:

1. The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is a Federal Government agency incorporated under the Health portfolio. ARPANSA is charged with responsibility for protecting the health and safety of people, and the environment, from the harmful effects of radiation (ionizing and non-ionizing).

2. Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 2002, 'Radiation Protection Standard: Maximum Exposure Levels to Radiofrequency Fields — 3 kHz to 300 GHz', Radiation Protection Series Publication No. 3, ARPANSA, Yallambie Australia.
   [Printed version: ISBN 0-642-79400-6 ISSN 1445-9760]
   [Web version: ISBN 0-642-79402-2 ISSN 1445-9760]

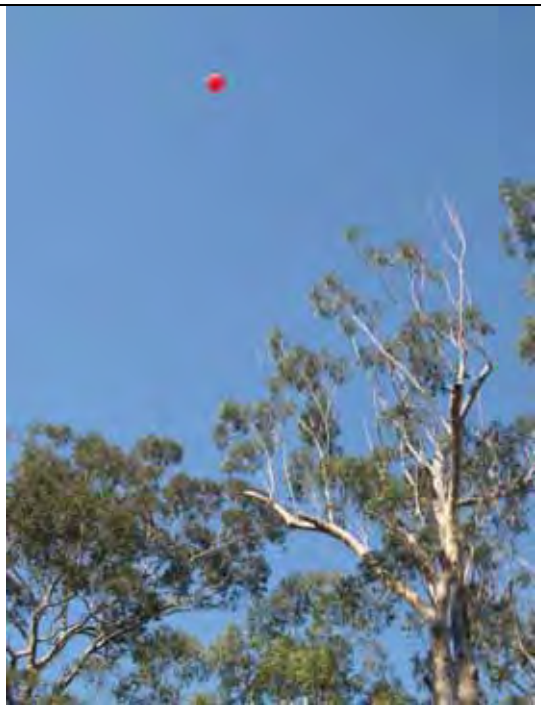
3. The Australian Communications Authority regulates telecommunications and radiocommunications, including licensing, compliance with codes and standards, spectrum management and consumer safeguards. It also represents Australia's communications interests internationally.

4. ACA mandated exposure limits as in force at the issue date of this report. Further information refer to the ACA web site http://www.aca.gov.au/consumer_info/issues_alerts/info_licensees.htm

5. The EME predictions in this report assume a worst-case scenario being:
   - base station transmitters operating at maximum power (no automatic power reduction)
   - simultaneous telephone calls on all channels
   - an unobstructed line of sight view to the antennas.
   In practice a worst-case scenario is rarely the case. There are often trees and buildings in the immediate vicinity, and cellular networks automatically adjust transmit power to suit the actual telephone traffic. For these reasons, care should be taken when comparing prediction reports & actual measurements, as the predicted levels will often be considerably higher.

ATTACHMENT 4: PHOTOGRAPHS OF THE SITE

Tall spotted gums surrounding the site



Balloon positioned 5m above the level of the proposed tower.

The site has been disturbed in the past and contains little or no ground cover.

Durras Road

The blocked access way would be reinstated during construction and then restored after the works to ensure that public access to the site is restricted.

ATTACHMENT 5: FLORA SPECIES LIST FOR THE SITE

Relative abundance is given by a cover abundance scale (modified Braun-Blanquet):

1 1 to a few individuals present, less than 5% cover

2 many individuals present, but still less than 5% cover

3 5 - < 20% cover

4 20 - < 50% cover

5 50 - < 75% cover

6 75 - 100% cover

Cover/abundance scores relate to general abundance over the entire site, not to representative quadrats.

*Introduced species and Australian natives naturalised outside their natural range due to dumping of garden waste are preceded by an asterisk.

Scientific name	**Common name**	**Family**	**Abundance**
TREES			
Acacia irrorata ssp irrorata	green wattle	Fabaceae	0-3
Acacia longifolia ssp longifolia	Sydney golden wattle	Fabaceae	0-2
Acacia mearnsii	black wattle	Fabaceae	1
Allocasuarina littoralis	black sheoak	Casuarinaceae	2-3
Corymbia gummifera	red bloodwood	Myrtaceae	1
Corymbia maculata	spotted gum	Myrtaceae	1-3
Elaeocarpus reticulatus	blueberry ash	Elaeocarpaceae	1
Eucalyptus pilularis	blackbutt	Myrtaceae	0-3
Synoum glandulosum	scentless rosewood	Meliaceae	1
SHRUBS, SUB-SHRUBS			
Acacia terminalis ssp angustifolia	sunshine wattle	Fabaceae	0-2
Banksia spinulosa var. spinulosa	hairpin banksia	Proteaceae	1
Bossiaea obcordata		Fabaceae	0-2
**Hakea salicifolia narrow leafed form*		Proteaceae	1
Hibbertia linearis	guineaflower	Dilleniaceae	1
**Leonotis leonurus*		Lamiaceae	1
Leucopogon juniperinus	prickly beard heath	Epacridaceae	1
Macrozamia communis	burrawang	Zamiaceae	0-2
Notelaea longifolia forma longifolia	large mock olive	Oleaceae	1

Notelaea venosa	veined mock olive	Oleaceae	1
Persoonia linearis	narrow-leaved geebung	Proteaceae	1
Podolobium ilicifolium	holly-leaf pea	Fabaceae	1
Pultenaea daphnoides		Fabaceae	1
**Senna pendula var. glabrata*		Fabaceae	0-2
**Senna septemtrionalis*		Fabaceae	1
**Solanum mauritianum*	wild tobacco bush	Solanaceae	1
FERNS			
Calochlaena dubia	common ground fern	Dicksoniaceae	0-3
**Nephrolepis cordifolia*	fishbone fern	Davalliaceae	0-3
Pteridium esculentum	bracken	Dennstaedtiaceae	0-3
Pteris tremula	tender brake	Pteridaceae	1
VINES AND TWINERS			
Cissus hypoglauca	native grape, water vine	Vitaceae	0-2
Glycine clandestina	twining glycine	Fabaceae	1
Hardenbergia violacea	native sarsaparilla	Fabaceae	1
Hibbertia scandens		Dilleniaceae	1
FORBS			
**Aristea ecklonii*		Iridaceae	0-3
**Bidens pilosa*	cobbler's peg	Asteraceae	1
**Centaurium ?erythraea*	centaury	Gentianaceae	1
**Chlorophytum comosum*		Anthericaceae	0-3
**Cirsium vulgare*	black or spear thistle	Asteraceae	0-2
**Conyza albida*	fleabane	Asteraceae	1
**Crassula multicava*	stonecrop	Crassulaceae	0-2
Desmodium gunnii	southern tick trefoil	Fabaceae	1
Dianella caerulea	blue flax lily	Phormiaceae	0-2
Dichondra repens	kidney weed	Convolvulaceae	1
**Erigeron karvinskianus*	seaside daisy	Asteraceae	1
Euchiton sp.		Asteraceae	1
**Hedychium gardnerianum*	ginger lily	Zingiberaceae	1
Hydrocotyle sp.		Apiaceae	0-2

**Hypochaeris radicata*	cat's ear, flatweed	Asteraceae	0-3
Opercularia aspera	stinkweed	Rubiaceae	1
Patersonia glabrata		Iridaceae	1
Pomax umbellata		Rubiaceae	1
Pratia purpurascens	whiteroot	Lobeliaceae	1
Scaevola ramosissima	fan flower	Goodeniaceae	1
Senecio minimus		Asteraceae	
**Tradescantia fluminensis*	wandering jew	Commelinaceae	1
Urtica incisa	stinging nettle	Urticaceae	0-3
Viola hederacea	ivy-leafed violet	Violaceae	2
GRASSES			
Aristida vagans	three awn grass	Poaceae	1
Cymbopogon refractus	barbed wire grass	Poaceae	1
**Ehrharta erecta*	panic veldtgrass	Poaceae	0-3
Entolasia stricta	wiry panic	Poaceae	2
Imperata cylindrica var. *major*	blady grass	Poaceae	0-3
Microlaena stipoides	weeping grass	Poaceae	1
Notodanthonia longifolia	curly wallaby grass	Poaceae	0-2
Poa ensiformis		Poaceae	1
Aristida vagans	three awn grass	Poaceae	1
Cymbopogon refractus	barbed wire grass	Poaceae	1
GRAMINOIDS			
**Cordyline australis*		Asteliaceae	1
Gahnia sieberiana	red fruited saw-sedge	Cyperaceae	1
Isolepis nodosa		Cyperaceae	1
Juncus usitatus	common or tussock rush	Juncaceae	1
Lomandra longifolia	spiny matrush	Lomandraceae	1
Lomandra multiflora ssp multiflora		Lomandraceae	1
Lomandra obliqua		Lomandraceae	

ATTACHMENT 6: THREATENED SPECIES EVALUATIONS

Flora

NPWS Wildlife Atlas records were consulted for records of threatened plant species from the Batemans Bay 1:100,000 map sheet to determine if any other species had the potential to occur in the area. These species, their habitat requirements and their likelihood of occurrence onsite are evaluated below.

Species	Category *	Habitat required	Likelihood of presence onsite
Correa baeuerlenii, shrub (Rutaceae)	V, v	Grows in a range of forested habitats, often in riparian or rocky sites, between Batemans Bay (two very old and one 1971 record between Nelligen and Runnyford) and Bega. Neither rocky nor riparian habitat is present, and the species is quite a conspicuous one and was not seen on the site.	Low
Aldrovanda vesiculosa, aquatic herb (Droseraceae)	E	Grows in shallow freshwater and has been recorded in wetlands in the Moruya area. No suitable habitat is present.	Low
Cryptostylis hunteriana, terrestrial orchid (Orchidaceae)	V, v	Grows in sandy soils in coastal situations. Descriptions of its preferred habitat include "swamp-heath on sandy soils" (Weston 1993), "Favours swamp fringes in Victoria, while in New South Wales it occupies habitats ranging from scrubby swamp fringes to steep bare hillsides in tall eucalypt forest" (Bishop 1996) and "open woodland with a heath understorey" on dry sandy soil for the NSW Central Coast (Bell, 2001). No areas with sandy soils or swamp-heath vegetation occur on the route, so the species is unlikely to occur here. There is one record on the DEC Atlas from Murramurrang NP near East Lynne. The forest in the East Lynne area includes heathy forest which is more likely to provide suitable habitat.	Low
Genoplesium vernale, terrestrial orchid (Orchidaceae)	V, v	This species occurs between Mogo and Jervis Bay in a range of dry, mostly heathy forest or woodland types, which very rarely include spotted gum (*Corymbia maculata*). The forest type occurring on the site is only marginally suitable habitat for this species and this combined with the prior site disturbance means that the probability of its occurrence in the vicinity is very low.	Low
Thesium australe, austral toadflax, perennial forb (Santalaceae)	V, v	This species is a root parasite on grasses, typically kangaroo grass (*Themeda triandra*), occurring in grasslands and grassy woodlands. The nearest records are from south of Moruya and Ulladulla on coastal grassy headlands. No suitable habitat is present on the site.	Low

Species	**Category ***	**Habitat required**	**Likelihood of presence onsite**
Persicaria elatior, annual forb (Polygonaceae)	V, v	Grows in seasonally wet sites, including stream banks and swamp margins (J. Miles, pers. obs.). The nearest record is at Catalina in Batemans Bay. No suitable habitat is present on the site.	Low

V listed as Vulnerable in NSW in Schedule 2 of the *Threatened Species Conservation Act*

E listed as Endangered in NSW in Schedule 1 of the *Threatened Species Conservation Act*

v listed as Vulnerable in the schedules of the Commonwealth *Environmental Protection and Biodiversity Conservation Act*

e listed as Endangered in the schedules of the Commonwealth *Environmental Protection and Biodiversity Conservation Act*

Fauna

An evaluation of the likelihood of the presence onsite and potential for impact on threatened fauna from species listed as threatened found within the Murramarang National Park (from the NPWS Wildlife Atlas & EPBC Database) is presented below. Wetland, marine and pelagic species have been excluded from this list as these habitat types would not be impacted by the proposal.

Species and Status*	**Ecology**	**Likelihood of occurrence onsite**	**Potential to be impacted**
Striated Fieldwren *Calamanthus fuliginosus* V TSC	This species nests on the ground under bushes and tussocks and forages in undergrowth. It favours swampy heaths and tussock fields in coastal areas, where it nests close to the ground in untidy domed nests made of moss, grass and leaves. Breeding on the ground, this species is susceptible to predation by foxes, dogs and cats as well as trampling by stock and human traffic.	This species has been recorded approximately 5km from the site. Potential habitat would not be affected.	Nil
Square-tailed Kite *Lopoitinia isura* V TSC	This species' preferred habitat is open eucalypt forest and woodland (Schodde & Tidemann 1986). Here it predates in forest canopy (Klippel 1992) and builds large stick nests in tall trees where it preys on small birds in the tree tops (Klippel 1992). Resident pairs have territories of greater than 100 km². The species is believed to be nomadic (Slater *et al.* 1986).	Two records occur south of Bateman's Bay. Potential habitat would not be affected.	Nil
White-bellied Sea-eagle *Haliaetus leucogaster-* JAMBA/CAMBA	Not listed as threatened under TSC Act however, this species may be rare in SE Asia. Inhabits coasts, islands, estuaries and inlets.	Likely to occur in the area. Potential habitat would not be affected.	Nil
White throated Needletail *Hirundapus caudacutus* JAMBA/CAMBA	This is a fast flying species, occurring in Australia in large numbers during the non-breeding season (October – August). It roosts in trees and forages on flying insects, commonly in thermals associated with storm fronts or bush fires (Australian Museum 2003) and often with other species, including the Fork-tailed Swift.	Most records for this species in NSW are coastal. Several records occur in the locality. Potential habitat would not be affected.	Nil

Species and Status*	Ecology	Likelihood of occurrence onsite	Potential to be impacted
Gang-gang Cockatoo *Callocephalon fimbriatum* V TSC	This species occupies tall montane forests and woodlands (particularly heavily timbered and mature wet sclerophyll forests) in summer as well as sub-alpine Snow Gum woodland and occasionally temperate rainforests (Forshaw 1989). The Gang-gang Cockatoo occurs at lower altitudes in drier, more open eucalypt forests and woodlands (particularly box-ironbark assemblages) (Shields and Crome 1992). This species requires large hollows in which to breed (Gibbons 1999, Gibbons and Lindenmayer 2002). Breeding usually occurs in tall mature sclerophyll forests that have a dense understorey, and occasionally in coastal forests.	Several records occur within the locality. A small amount of potential nesting habitat may be affected.	Low
Glossy Black Cockatoo *Calyptohynchus lathami* V TSC	This is a species of open forests and woodland, dependent mainly on the seeds of Allocasuarina trees as a food source (Blakers *et al*. 1984). Large trees with hollows are required for breeding sites (Emison *et al*. 1987). Competition for hollows increases with openness of habitat and can be a threat to this species. Potential feed tree species were observed at the site and feeding sign (chewed cones) was observed. Feed tree species are relatively common regionally, and the proposal does not involve tree clearing.	Several records occur within the locality. A small amount of potential nesting habitat may be affected.	Low
Brown Treecreeper *Climacteris picumnus* V TSC	The species occurs in eucalypt woodlands, mallee and drier open forest of eastern Australia (Schodde & Tidemann 1986). Threats include the loss of hollow bearing trees, decrease in the diversity of ground-dwelling invertebrates (Bromham *et al.* 1999) and increased competition with aggressive honeyeater species.	A record occurs close to the site. A small amount of potential nesting habitat may be affected.	Low
Black-faced Monarch *Monarcha melanopsis* JAMBA/CAMBA	This species occurs in coastal NSW from rainforests, eucalypt woodlands, coastal scrub, and damp gullies in rainforest (Pizzey & Knight, 1997).	Several records occur in the locality. A small amount of potential habitat may be affected.	Low

Species and Status*	**Ecology**	**Likelihood of occurrence onsite**	**Potential to be impacted**
Rufous Fantail *Rhipidura rufifrons* JAMBA/CAMBA	This species occurs in the understorey of rainforest and wet eucalypt forest and gullies, paperbark mangroves and water courses. During migration it tends to occupy streets, towns and farms.	Several records occur in the locality. No suitable habitat would be affected.	Nil
Satin Flycatcher *Myiagra rubecula* JAMBA/CAMBA	This species occurs in heavily vegetated gullies in forests; during migration it occurs in coastal forests, woodlands, mangroves, trees in open country and gardens.	No local records occur. No suitable habitat would be affected.	Nil
Regent Honeyeater *Xanthomyza Phrygia* E TSC E EPBC JAMBA/CAMBA	This species inhabits eucalypt forests and woodlands (Blakers *et al.* 1984). It is highly nomadic and relatively large numbers can arrive at and vacate areas depending on local and regional flowering of favoured species. It feeds mostly on the flowers of eucalypts (particularly box and ironbark species), but also eats invertebrates and exotic fruits (Blakers *et al.* 1984). Although formerly recorded in areas where favoured food trees were relatively scarce (Blakers *et al.* 1984), this species is now almost completely restricted to a few relatively intact extensive stands of its favoured tree species, mostly on the inland side of the Great Dividing Range (Garnett 1993).	A record occurs close to the site. A small amount of potential foraging habitat may be affected.	Low
Olive Whistler *Pachycephala olivacea* V TSC	In coastal areas, this species strongly favours moist forest and riparian thickets, especially teatree thickets (Blakers *et al*. 1984, Emison *et al.* 1987).	Three records occur in the locality. A small amount of potential but marginal foraging habitat may be affected.	Low
Fork-tailed Swift *Apus pacificus* EPBC	Forages over open country and nests in cliffs and tall tress. Occasional mass movements occur and this species may spend nights on the wing (Pizzey and Knight 2003).	Local records are present for this species. It is a migrant to the area. A small amount of potential habitat may be affected.	Low

Species and Status*	Ecology	Likelihood of occurrence onsite	Potential to be impacted
Rainbow Bee-eater *Merops ornatus* EPBC	A species of open woodlands and riverbanks. This species can form loose colonies when breeding, in northern Australia. Migrants usually follow established routes.	No local records occur. A small amount of potential habitat may be affected.	Low
Turquoise Parrot *Neophema pulchella* V TSC	The Turquoise Parrot feeds on grass and herb seeds and nests in holes in trees or stumps. It normally lives on the edges of eucalypt woodland where it has access to grassy areas. It tends to prefer sheltered valleys amongst rocky hills (Klippel, 1992).	Records occur from Durras Lake. A small amount of potential habitat may be affected.	Low
Ground Parrot (eastern subsp.) *Pezoporus wallicus wallicus* V TSC	This species is closely associated with heathlands and sedgelands. It is present in swampy areas, dry ridges and is tolerant to burned areas of these habitat types. It is sedentary with local seasonal movements (Pizzey & Knight 2003). It nests in tussock stunted bush (Pizzey et al. 1997).	No local records occur. A small amount of potential habitat may be affected.	Low
Diamond Firetail *Stagonopleura guttata* V TSC	Occurs predominantly west of the Great Dividing Range (Blakers *et al.* 1984, Schodde and Mason 1999) although local populations are known. Feeds on the ground on grass seeds, in groups from 5 to 150 individuals (Schodde and Tidemann 1986), nesting in pairs or communally in shrubs and small trees. Restricted largely to ungrazed or lightly grazed woodland remnants of grassy eucalypt woodlands, including Box-Gum and Snow Gum Woodlands, and grassland and riparian areas, and sometimes lightly wooded farmland. May form large flocks during winter and autumn.	No local records occur. No suitable habitat would be affected.	Nil
Swift Parrot *Lathamus discolour* E TSC E EPBC	This species is highly nomadic and relatively large numbers can arrive at and vacate areas depending on local and regional flowering of favoured species. In eastern NSW, Swift Parrots are present only in winter and therefore rely on winter-flowering eucalypts such as *Eucalyptus robusta* (Swamp Mahogany) and *E. maculata* (Spotted Gum) (Brereton 1996).	No local records occur for this species. No suitable habitat would be affected.	Low
Orange-bellied Parrot *Neophema chrysogaster* E EPBC	This species breeds during the summer in south-west Tasmania. It migrates in the non-breeding season to the mainland where it feeds in coastal saltmarshes and dunes. It is usually patchily distributed from south-east South Australia to the eastern portion of Gippsland in Victoria.	No local records occur for this species. A small amount of potential but marginal foraging habitat may be affected.	Nil

Species and Status*	**Ecology**	**Likelihood of occurrence onsite**	**Potential to be impacted**
Superb Fruit-Dove *Ptilinopus superbus* V TSC	This species is largely confined to pockets of suitable habitat as far south as Moruya. Preferred habitat is 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.	No potential habitat would be affected.	Nil
Barking Owl *Ninox connivens* V TSC	This species preys on mammals, birds and invertebrates, and can take prey as large as rabbits (Schodde & Tideman 1995). Mated pairs occupy a 30 to 200 hectare territory, depending on habitat quality. The species is found in drier forest and woodland and has been recorded persisting around human habitation. Habitat essential for the lifecycle of this species includes forest or woodland habitat, large nesting hollows and an abundance of prey species.	No local records occur for this species. A small amount of potential but marginal foraging habitat may be affected.	Low
Powerful Owl *Ninox strenua* V TSC	This species is dependent on large territories in coastal and mountain eucalypt forest (Blakers *et al.* 1984). Territories are usually centred around gullies, with roost and nest sites located centrally (Fleay 1968). Large tree hollows are required in which to nest (Emison *et al.* 1987). Abundant arboreal mammals within forests (which form about 80% of the diet of this species) are a requirement of this species (Blakers *et al.* 1984).	Local records occur for this species. A small amount of potential but marginal foraging habitat may be affected.	Nil-Low
Masked Owl *Tyto novaehollandiae* V TSC	This species forages in a range of forest and woodland types but requires large tree hollows for nesting. Forested areas adjacent to areas of dense and sparse ground cover within close proximity are required for foraging (Garnett 1993). This species also occurs in fragmented forest-pastoral land usually near creek lines and in open grassy woodland.	Local records occur for this species. A small amount of potential foraging habitat may be affected.	Low
Sooty Owl *Tyto tenebricosa* V TSC	Pairs of this species establish large permanent territories in rainforest and wet eucalypt forest (Blakers *et al.* 1984). Within these forests they prey mostly on a variety of small to medium terrestrial and arboreal mammals (Blakers *et al.* 1984). The Sooty Owl may also nest in dry sclerophyll forest, adjacent to moister forests, if trees with suitable hollows are present.	Local records occur for this species. A small amount of potential roosting habitat may be affected.	Low

Species and Status*	Ecology	Likelihood of occurrence onsite	Potential to be impacted
Brush-tailed Phascogale *Phascogale tapoatafa* V TSC	This species is found in a variety of forest types. Preferred habitat is likely to be open dry sclerophyll forest with little ground cover on ridges up to 600 metres (Cuttle 1983). It is predominantly carnivorous, foraging on arthropods, invertebrates, small vertebrates and nectar (Strahan 1995). It requires tree hollows in which to nest.	One record occurs approximately 5km north of the site. A small amount of potential habitat may be affected.	Low
Spotted-tail Quoll *Dasyurus maculatus* V TSC E EPBC	Sclerophyll forest, rainforest in mountainous country, and coastal habitats can be utilised by this species (Le Souef & Burrell 1926). Habitat attributes which are likely to be critical to the life cycle for the Quoll are large areas of undisturbed habitat which provide a variety of key food and other resources such as large hollow logs, or small caves (dens) at ground level for denning. Quolls appear to be most abundant in areas with few roads and where foxes are either absent or kept in check by dingoes (Resource and Conservation Assessment Council, 1996). The species was identified in the Long Beach area from the NPWS Database records; however, the likely presence of foxes on the Surfside section reduces the likelihood of the species occurring in this area.	A record occurs within 10km of the site. Suitable habitat does not occur at the site due to its disturbance history.	Nil
White-footed Dunnart *Sminthopsis leucopus* V TSC	Research on this species in a recently logged area near Bega suggests that preferable habitat is treeless ridges and mid slopes with sparse ground cover of less than 51% (Lunney *et al.* 1989). The study suggested that it seeks initial seral stages of forest regenerating from gross disturbance" (Lunney *et al.* 1989). It constructs a bark nest beneath fallen timber or dense litter (Menkhorst and Knight 2001). The species was not identified in the area from the NPWS Database records.	No local records occur for this species. A small amount of potential habitat may be affected.	Low
Koala *Phascolarctos cinereus* V TSC	This species utilises a wide range of forest and woodland types. They are solitary with distinct home ranges (Strahan 1995) and utilise a diverse range of eucalypt trees typically present on high nutrient soils (Klippel 1992).	No local records occur. No suitable habitat would be affected.	Nil

Species and Status*	**Ecology**	**Likelihood of occurrence onsite**	**Potential to be impacted**
Yellow-bellied Glider *Petaurus australis* V TSC	This species is restricted to tall mature eucalypt forest in a band between coastal and higher altitude forests along large portions of the Victorian, New South Wales and Queensland coasts (Russell 1983). Habitat critical to the lifecycle of this species includes areas of contiguous tall sclerophyll forest, that provide large hollow bearing trees (den sites), and a food source, including a variety of invertebrates, sap feed trees, eucalypt nectar and pollen, manna and insect exudates. NPWS Database records show that the species has been found the site with an abundance of records in the region.	This species is present in the locality, including close to the site.	Low
Squirrel Glider *Petaurus norfolcensis* V TSC	This species is found in dry sclerophyll woodland, prefering dense, white-barked eucalyptus country (Klippel 1992) and is generally absent from closed forest (Menkhorst *et al.,* 1988). A mix of eucalypts, banksias and acacias including some winter flowering species and abundant hollows are required by this species. Fragmentation, predation by foxes and cats and inappropriate fire regimes are listed as threats to this species (NSW NPWS 1999*).*	Recorded within 10km to the north and south of the site. A small amount of potential habitat may be affected.	Low
Southern Brown Bandicoot (eastern) *Isodon obesulus obesulus* E TSC E EPBC	Scrubby habitat with low ground cover occasionally burnt out is preferred by this species (Braithwaite 1983). A preference for thick undergrowth can also provide protection from predators such as foxes (Lobert & Lee 1990). The species is generally nocturnal.	Not recorded within 10km of the site. No suitable habitat would be affected.	Nil
Long-nosed Potoroo *Potorous tridactylus* V TSC V EPBC	This species occurs in coastal heath, dry and wet sclerophyll forest and requires thick contiguous undergrowth. Individuals are generally concentrated where soil is light and sandy (Johnston 1983).	A local record occurs within 10km of the site. No suitable habitat would be affected.	Nil
Grey-headed Flying-fox *Pteropus poliocephalus* V TSC V EPBC	This species roosts in large camps, generally in wetter vegetation such as rainforest or swamp forest. Groups fly out at night to feed on fruit, nectar and blossom, particularly of *Eucalyptus, Melaleuca* and *Banksia*. This species shows fidelity to roosting areas but may feed in orchards. It appears to be showing increasing tolerance to human disturbance.	Recorded within 10km to the north and south of the site. No suitable habitat would be affected.	Nil

Species and Status*	**Ecology**	**Likelihood of occurrence onsite**	**Potential to be impacted**
Eastern Freetail-bat *Mormopterus norfolkensis* V TSC	The Eastern Freetail-bat is found along the east coast from south Queensland to southern NSW in sclerophyll forest and woodland east of the Great Dividing Range. It is solitary and probably insectivorous (DEC website). In the southern rivers region the Eastern Freetail-bat is known to be associated with dry sclerophyll forests (shrubby sub-formation) and wet sclerophyll forests (grassy sub-formation). Key habitat features for this species in this area are tree hollows, loose bark or man-made structures in which to roost and breed and dry and wet sclerophyll forests in which to forage (DEC website).	Several records occur approximately 7km south-east of the site. A small amount of potential roosting habitat may be affected.	Low
Common or Eastern Bent-wing Bat *Miniopterus schreibersii oceanensis* V TSC	This species is a common although vulnerable species. It roosts and raises its young in caves and mine tunnels (Strahan 1983). The species appears to forage above the forest canopy in a diverse range of forest types (Strahan 1983).	Records occur within 10km to the south-west of the site. No potential habitat would be affected.	Nil
Large-eared Pied Bat, Large Pied Bat *Chalinolobus dwyeri* *V EPBC*	Found near cliffs and caves with Bungonia marking the southern limit. Very patchy distribution in NSW. Roosts in caves, crevices and mud Fairy Martin nests in low to mid-elevation dry open forest and woodland close to these features. Found in well-timbered areas containing gullies. Likely to hibernate through the coolest months.	Not recorded within 10km of the site. No suitable habitat would be affected.	Nil
Golden-tipped Bat *Kerivoula papuensis* V TSC	This species is distributed along the east coast of Australia in scattered locations from Cape York Peninsula in Queensland to Bega in southern NSW. It is found in rainforest and adjacent sclerophyll forest and roosts in abandoned hanging Yellow-throated Scrubwren and Brown Gerygone nests located in rainforest gullies on small first- and second-order streams.	No local records occur. No potential habitat would be affected.	Nil

Species and Status*	**Ecology**	**Likelihood of occurrence onsite**	**Potential to be impacted**
Large-footed Myotis *Myotis adversus* V TSC	This species forages on the surface of water bodies such as rivers, lakes and swamps and roosts in caves, mine, tunnels and old buildings (Hall & Richards 1979).	Records occur from Durras Lake. No potential habitat would be affected.	Nil
Great or Eastern False Pipistrelle *Falsistrellus tasmaniensis* V TSC	Little is known of the habitat requirements of this species. It is found in a range of habitats including dry and wet sclerophyll forest but appears to prefer wet sclerophyll forest (Hall & Richards 1979). This species roosts in tree hollows (Phillips & Inwards 1984).	Records occur south of Batemans Bay. A small amount of potential habitat may be affected.	Low
Greater Broad-nosed Bat *Scoteanex rueppellii* V TSC	This species is recorded from a range of habitats, from woodland to rainforest (Hall & Richards 1979). It is known to roost in tree hollows (Richards 1983) but has also been found in roof spaces. Its diet includes slow-flying insects. It may prefer riparian areas adjacent cleared areas in which to forage.	No local records occur. A small amount of potential roosting habitat may be affected.	Low

V TSC Listed as Vulnerable on the *NSW Threatened Species Conservation Act, 1995*

E TSC Listed as Endangered on the *NSW Threatened Species Conservation Act, 1995*

V EPBC Listed as Vulnerable on the *Environmental Protection Biodiversity Conservation Act, 1999*

E EPBC Listed as Endangered on the *Environmental Protection Biodiversity Conservation Act, 1999*

JAMBA/CAMBA Listed on the Japan - Australia Migratory Bird Agreement (JAMBA), China - Australia Migratory Bird Agreement (CAMBA).

ATTACHMENT 7: MATTERS OF NATIONAL SIGNIFICANCE REPORT

EPBC Act Protected Matters Report 1 September 2006 11:59

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

You may wish to print this report for reference before moving to other pages or websites.

The Australian Natural Resources Atlas at http://www.environment.gov.au/atlas may provide further environmental information relevant to your selected area. Information about the EPBC Act including significance guidelines, forms and application process details can be found at http://www.deh.gov.au/epbc/assessmentsapprovals/index.html

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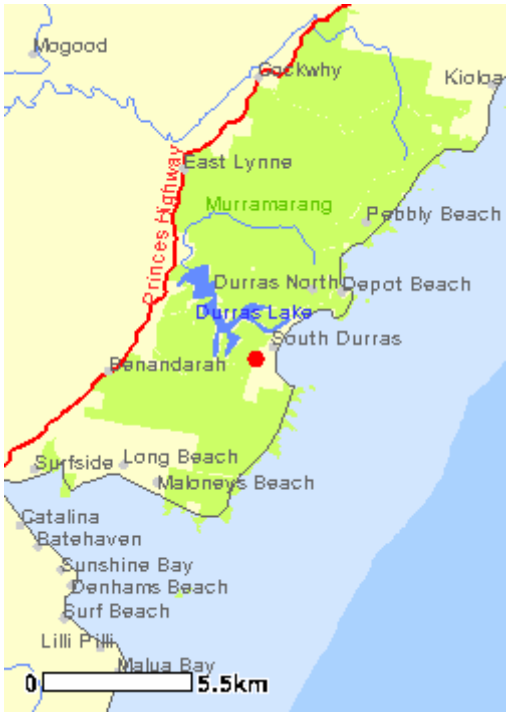
Search Type: Point

Buffer: 10 km

Coordinates: -35.65591,150.288111



Report Contents:

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see http://www.deh.gov.au/epbc/assessmentsapprovals/guidelines/index.html.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Significance: (Ramsar Sites)	None
Commonwealth Marine Areas:	Relevant
Threatened Ecological Communities:	None
Threatened Species:	41
Migratory Species:	38

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at http://www.deh.gov.au/heritage/index.html.

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at http://www.deh.gov.au/epbc/permits/index.html.

Commonwealth Lands:	1
Commonwealth Heritage Places:	None
Places on the RNE:	7
Listed Marine Species:	60
Whales and Other Cetaceans:	27
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	2
Other Commonwealth Reserves:	None
Regional Forest Agreements:	1

Details

Matters of National Environmental Significance

Commonwealth Marine Areas [Dataset Information]

Approval may be required for a proposed activity that is likely to have a significant impact on the environment in a Commonwealth Marine Area, when the action is outside the Commonwealth Marine Area, or the environment anywhere when the action is taken within the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Within 12 Nautical Mile Limit

Within 3 Nautical Mile Limit

Threatened Species [Dataset Information]	Status	Type of Presence
Birds		
Diomedea amsterdamensis * Amsterdam Albatross	Endangered	Species or species habitat may occur within area
Diomedea antipodensis * Antipodean Albatross	Vulnerable	Species or species habitat may occur within area
Diomedea dabbenena * Tristan Albatross	Endangered	Foraging may occur within area
Diomedea exulans * Wandering Albatross	Vulnerable	Species or species habitat may occur within area
Diomedea gibsoni * Gibson's Albatross	Vulnerable	Species or species habitat may occur within area
Lathamus discolor * Swift Parrot	Endangered	Species or species habitat may occur within area
Macronectes giganteus * Southern Giant-Petrel	Endangered	Species or species habitat may occur within area
Macronectes halli * Northern Giant-Petrel	Vulnerable	Species or species habitat may occur within area
Neophema chrysogaster * Orange-bellied Parrot	Endangered	Species or species habitat may occur within area
*Pterodroma neglecta neglecta** Kermadec Petrel (western)	Vulnerable	Species or species habitat may occur within area
Rostratula australis *	Vulnerable	Species or species habitat may occur

Australian Painted Snipe		within area
Thalassarche bulleri * Buller's Albatross	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta * Shy Albatross	Vulnerable	Species or species habitat may occur within area
Thalassarche chrysostoma * Grey-headed Albatross	Vulnerable	Species or species habitat may occur within area
Thalassarche eremita * Chatham Albatross	Endangered	Foraging known to occur within area
Thalassarche impavida * Campbell Albatross	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris * Black-browed Albatross	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini * Salvin's Albatross	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi * White-capped Albatross	Vulnerable	Species or species habitat may occur within area
Xanthomyza phrygia * Regent Honeyeater	Endangered	Species or species habitat likely to occur within area
Frogs		
Heleioporus australiacus * Giant Burrowing Frog	Vulnerable	Species or species habitat likely to occur within area
Litoria aurea * Green and Golden Bell Frog	Vulnerable	Species or species habitat likely to occur within area
Litoria littlejohni * Littlejohn's Tree Frog, Heath Frog	Vulnerable	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus * Blue Whale	Endangered	Species or species habitat may occur within area
Chalinolobus dwyeri * Large-eared Pied Bat, Large Pied Bat	Vulnerable	Species or species habitat may occur within area
*Dasyurus maculatus maculatus (SE mainland population)** Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Endangered	Species or species habitat may occur within area
Eubalaena australis * Southern Right Whale	Endangered	Species or species habitat known to occur within area
*Isoodon obesulus obesulus** Southern Brown Bandicoot	Endangered	Species or species habitat may occur within area
Megaptera novaeangliae * Humpback Whale	Vulnerable	Species or species habitat known to occur within area

*Potorous tridactylus tridactylus** Long-nosed Potoroo (SE mainland)	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus * Grey-headed Flying-fox	Vulnerable	Species or species habitat likely to occur within area
Ray-finned fishes		
Prototroctes maraena * Australian Grayling	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Dermochelys coriacea * Leathery Turtle, Leatherback Turtle, Luth	Vulnerable	Species or species habitat may occur within area
Sharks		
*Carcharias taurus (east coast population)** Grey Nurse Shark (east coast population)	Critically Endangered	Congregation or aggregation known to occur within area
Carcharodon carcharias * Great White Shark	Vulnerable	Species or species habitat may occur within area
Rhincodon typus * Whale Shark	Vulnerable	Species or species habitat may occur within area
Plants		
Caladenia tessellata * Thick-lipped Spider-orchid, Daddy Long-legs	Vulnerable	Species or species habitat likely to occur within area
Cryptostylis hunteriana * Leafless Tongue-orchid	Vulnerable	Species or species habitat may occur within area
Genoplesium vernale * East Lynne Midge-orchid	Vulnerable	Species or species habitat may occur within area
Persicaria elatior * Knotweed	Vulnerable	Species or species habitat likely to occur within area
Thesium australe * Austral Toadflax, Toadflax	Vulnerable	Species or species habitat likely to occur within area
Migratory Species [Dataset Information]	Status	Type of Presence
Migratory Terrestrial Species		
Birds		
Haliaeetus leucogaster White-bellied Sea-Eagle	Migratory	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail	Migratory	Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch	Migratory	Breeding may occur within area
Myiagra cyanoleuca Satin Flycatcher	Migratory	Breeding likely to occur within area

Neophema chrysogaster Orange-bellied Parrot	Migratory	Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail	Migratory	Breeding may occur within area
Xanthomyza phrygia Regent Honeyeater	Migratory	Species or species habitat likely to occur within area

Migratory Wetland Species

Birds

Gallinago hardwickii Latham's Snipe, Japanese Snipe	Migratory	Species or species habitat may occur within area
Rostratula benghalensis s. lat. Painted Snipe	Migratory	Species or species habitat may occur within area

Migratory Marine Birds

Diomedea amsterdamensis Amsterdam Albatross	Migratory	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross	Migratory	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross	Migratory	Foraging may occur within area
Diomedea exulans Wandering Albatross	Migratory	Species or species habitat may occur within area
Diomedea gibsoni Gibson's Albatross	Migratory	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel	Migratory	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel	Migratory	Species or species habitat may occur within area
Puffinus griseus Sooty Shearwater	Migratory	Breeding known to occur within area
Puffinus pacificus Wedge-tailed Shearwater	Migratory	Breeding known to occur within area
Puffinus tenuirostris Short-tailed Shearwater	Migratory	Breeding known to occur within area
Thalassarche bulleri Buller's Albatross	Migratory	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross	Migratory	Species or species habitat may occur within area
Thalassarche chrysostoma Grey-headed Albatross	Migratory	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross	Migratory	Species or species habitat may occur within area

Thalassarche melanophris Black-browed Albatross	Migratory	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross	Migratory	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross	Migratory	Species or species habitat may occur within area
Migratory Marine Species		
Mammals		
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale	Migratory	Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale	Migratory	Species or species habitat may occur within area
Balaenoptera musculus ***** Blue Whale	Migratory	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale	Migratory	Species or species habitat may occur within area
Eubalaena australis ***** Southern Right Whale	Migratory	Species or species habitat known to occur within area
Lagenorhynchus obscurus Dusky Dolphin	Migratory	Species or species habitat may occur within area
Megaptera novaeangliae ***** Humpback Whale	Migratory	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca	Migratory	Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale	Migratory	Species or species habitat may occur within area
Reptiles		
Dermochelys coriacea ***** Leathery Turtle, Leatherback Turtle, Luth	Migratory	Species or species habitat may occur within area
Sharks		
Carcharodon carcharias Great White Shark	Migratory	Species or species habitat may occur within area
Rhincodon typus Whale Shark	Migratory	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Dataset Information]	Status	Type of Presence
Birds		
Apus pacificus Fork-tailed Swift	Listed - overfly marine area	Species or species habitat may occur within area
Ardea alba Great Egret, White Egret	Listed - overfly marine area	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Listed - overfly marine area	Species or species habitat may occur within area
Catharacta skua Great Skua	Listed	Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross	Listed	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross	Listed	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross	Listed	Foraging may occur within area
Diomedea exulans Wandering Albatross	Listed	Species or species habitat may occur within area
Diomedea gibsoni Gibson's Albatross	Listed	Species or species habitat may occur within area
Eudyptula minor Little Penguin	Listed	Breeding known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe	Listed - overfly marine area	Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle	Listed	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail	Listed - overfly marine area	Species or species habitat may occur within area
Lathamus discolor Swift Parrot	Listed - overfly marine area	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel	Listed	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel	Listed	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater	Listed - overfly marine area	Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch	Listed - overfly marine area	Breeding may occur within area
Myiagra cyanoleuca Satin Flycatcher	Listed - overfly marine area	Breeding likely to occur within area

Neophema chrysogaster Orange-bellied Parrot	Listed - overfly marine area	Species or species habitat may occur within area
Pelagodroma marina White-faced Storm-Petrel	Listed	Breeding known to occur within area
Puffinus griseus Sooty Shearwater	Listed	Breeding known to occur within area
Puffinus pacificus Wedge-tailed Shearwater	Listed	Breeding known to occur within area
Puffinus tenuirostris Short-tailed Shearwater	Listed	Breeding known to occur within area
Rhipidura rufifrons Rufous Fantail	Listed - overfly marine area	Breeding may occur within area
Rostratula benghalensis s. lat. Painted Snipe	Listed - overfly marine area	Species or species habitat may occur within area
Sterna albifrons Little Tern	Listed	Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross	Listed	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross	Listed	Species or species habitat may occur within area
Thalassarche chlororhynchos Yellow-nosed Albatross, Atlantic Yellow-nosed Albatross	Listed	Species or species habitat may occur within area
Thalassarche chrysostoma Grey-headed Albatross	Listed	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross	Listed	Foraging known to occur within area
Thalassarche impavida Campbell Albatross	Listed	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross	Listed	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross	Listed	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross	Listed	Species or species habitat may occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern)	Listed - overfly marine area	Species or species habitat likely to occur within area
Mammals		
Arctocephalus forsteri New Zealand Fur-seal	Listed	Species or species habitat may occur within area
Arctocephalus pusillus Australian Fur-seal, Australo-African	Listed	Species or species habitat may occur within area

Fur-seal

Ray-finned fishes

Acentronura tentaculata Hairy Pygmy Pipehorse	Listed	Species or species habitat may occur within area
Cosmocampus howensis Lord Howe Pipefish	Listed	Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish	Listed	Species or species habitat may occur within area
Hippocampus abdominalis Eastern Potbelly Seahorse, New Zealand Potbelly, Seahorse, Bigbelly Seahorse	Listed	Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse	Listed	Species or species habitat may occur within area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse	Listed	Species or species habitat may occur within area
Histiogamphelus briggsii Briggs' Crested Pipefish, Briggs' Pipefish	Listed	Species or species habitat may occur within area
Kimblaeus bassensis Trawl Pipefish, Kimbla Pipefish	Listed	Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish	Listed	Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish	Listed	Species or species habitat may occur within area
Notiocampus ruber Red Pipefish	Listed	Species or species habitat may occur within area
Phyllopteryx taeniolatus Weedy Seadragon, Common Seadragon	Listed	Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse	Listed	Species or species habitat may occur within area
Solenostomus cyanopterus Blue-finned Ghost Pipefish, Robust Ghost Pipefish	Listed	Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish	Listed	Species or species habitat may occur within area
Stigmatopora nigra Wide-bodied Pipefish, Black Pipefish	Listed	Species or species habitat may occur within area
Syngnathoides biaculeatus Double-ended Pipehorse, Alligator	Listed	Species or species habitat may occur within area

Pipefish		
Urocampus carinirostris Hairy Pipefish	Listed	Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish	Listed	Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish	Listed	Species or species habitat may occur within area
Reptiles		
Dermochelys coriacea ***** Leathery Turtle, Leatherback Turtle, Luth	Listed	Species or species habitat may occur within area
Whales and Other Cetaceans [Dataset Information]	Status	Type of Presence
Balaenoptera acutorostrata Minke Whale	Cetacean	Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale	Cetacean	Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale	Cetacean	Species or species habitat may occur within area
Balaenoptera musculus ***** Blue Whale	Cetacean	Species or species habitat may occur within area
Berardius arnuxii Arnoux's Beaked Whale	Cetacean	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale	Cetacean	Species or species habitat may occur within area
Delphinus delphis Common Dolphin	Cetacean	Species or species habitat may occur within area
Eubalaena australis ***** Southern Right Whale	Cetacean	Species or species habitat known to occur within area
Globicephala macrorhynchus Short-finned Pilot Whale	Cetacean	Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale	Cetacean	Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus	Cetacean	Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale	Cetacean	Species or species habitat may occur within area
Kogia simus Dwarf Sperm Whale	Cetacean	Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin	Cetacean	Species or species habitat may occur within area

Lissodelphis peronii Southern Right Whale Dolphin	Cetacean	Species or species habitat may occur within area
Megaptera novaeangliae ** Humpback Whale	Cetacean	Species or species habitat known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale	Cetacean	Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale	Cetacean	Species or species habitat may occur within area
Mesoplodon hectori Hector's Beaked Whale	Cetacean	Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale	Cetacean	Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale	Cetacean	Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca	Cetacean	Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale	Cetacean	Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale	Cetacean	Species or species habitat may occur within area
Tursiops aduncus Spotted Bottlenose Dolphin	Cetacean	Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin	Cetacean	Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale	Cetacean	Species or species habitat may occur within area

Commonwealth Lands [Dataset Information]

Places on the RNE [Dataset Information]
Note that not all Indigenous sites may be listed.

Indigenous

Durras Mountain Site Complexes NSW

Durras North Area NSW

Natural

Benandarah Area NSW

Cullendulla Embayment NSW

Murramarang Area NSW

Murramarang National Park (1980 boundary) NSW

Myrtle Beach - Wasp Head Coastal Area NSW

Extra Information

State and Territory Reserves [Dataset Information]

Cullendulla Creek Nature Reserve, NSW

Murramarang National Park, NSW

Regional Forest Agreements [Dataset Information]
Note that all RFA areas including those still under consideration have been included.

Southern RFA, New South Wales

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the *Environment Protection and Biodiversity Conservation Act 1999*. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under "type of presence". For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the migratory and marine provisions of the Act have been mapped.

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites;
- seals which have only been mapped for breeding sites near the Australian continent.

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

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- Department of Primary Industries, Water and Environment, Tasmania
- Department of Environment and Heritage, South Australia Planning SA
- Parks and Wildlife Commission of the Northern Territory
- Environmental Protection Agency, Queensland
- Birds Australia
- Australian Bird and Bat Banding Scheme
- Australian National Wildlife Collection
- Natural history museums of Australia
- Queensland Herbarium
- National Herbarium of NSW
- Royal Botanic Gardens and National Herbarium of Victoria
- Tasmanian Herbarium
- State Herbarium of South Australia
- Northern Territory Herbarium
- Western Australian Herbarium
- Australian National Herbarium, Atherton and Canberra
- University of New England
- Other groups and individuals

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