Land Use Conflict Risk Assessment

Planning Proposal to rezone
Part of Lot 2 DP1159910 No 66 The Saddle Road Brunswick Heads for Employment Land Services in accordance with Council's BILS Policy

HEALTH SCIENCE ENVIROMENTAL EDUCATION
ENVIRONMENTAL AUDITOR

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1. Introduction

Tim Fitzroy & Associates (TFA) has been engaged by Creative Capital (the Client) to undertake a Land Use Conflict Risk Assessment (LUCRA) for land described in real property terms as Lot 2 DP1159910 Brunswick Heads (see Site Locality Plan **Illustration 1.1**). The subject site covers an area of 52.13ha and is located about 3km south west of the Brunswick Heads Central Business District (CBD). The site is accessed via Gulgan Road. The site is currently used for cattle grazing and for residential, comprising a single residential dwelling.

This report has been prepared to accompany a Planning Proposal to Byron Shire Council (BSC) to rezone part of the land for Employment Land Purposes in accordance with Councils BILS Policy.

LUCRA's were initially conceived in the *Living and Working in Rural Areas Handbook* (Department of Primary Industries et.al 2007) by the Centre for Coastal Agricultural Landscapes in partnership with the Northern Rivers Catchment Management Authority as a tool to better manage potential land use conflicts between residential development and rural activities and environmental attributes/assets on the NSW North Coast. TFA have been requested by the applicant to adopt the LUCRA tool to identify potential land use conflicts risks associated with the planning proposal and existing land uses in the locale and where necessary propose mitigation options to address any unacceptable risks.

A site inspection coupled with a review of aerial photography (see **Illustration 2.1**) has identified the nearest affected offsite dwellings:

1. Dwelling 1 to the west (Lot 21 DP740271) No 10 The Saddle Road;
2. Dwelling 2 to the north west (Lot 31 DP 1018929) No 84 The Saddle Road;
3. Dwelling 3 to the north (Lot 1 DP 583377) No 82 The Saddle Road;
4. Dwelling 4 to the south west (Lot 1 DP 555377) No 174 The Saddle Road; and
5. Dwelling 5 to the south west (Lot 1 DP 301709) No 285 Gulgan Road.

The closest distance from the proposed Light Industrial zone to:

1. Dwelling 1 is 230m;
2. Dwelling 2 is 174m;
3. Dwelling 3 is 234m;
4. Dwelling 4 is 697m; and
5. Dwelling 5 is 538m.

The following enviornmental guidelines have been considered in the assessment of potential land use conflicts:

1. Noise Policy for Industry (NSW EPA 2017);
2. National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013;
3. Living and Working in Rural Areas Handbook (2007*)*; and
4. Byron Development Control Plan 2014.

In addition, a review of the following supporting documents for the proposed development has been undertaken:

1. Preliminary Site investigation (Contaminated Land Investigation Australia, July 2021);
2. Cattle Dip Exclusion Zone Assessment (Contaminated Land Investigation Australia, November 2021);
3. Agricultural Assessment – Lot 2, DP 1159910, Brunswick Heads (Allen & Associates, 2021);
4. DPI Consultation (Balanced Advice, 2018);
5. Report on Agricultural Activities, Saddle Road, Brunswick Heads, NSW (Dr LC Campbell, Sydney Institute of Agriculture, Sydney University, 2018);
6. Area 5 Gulgan North Planning Proposal Ecological Assessment Report (Bower Ecology, 9 December 2021);
7. Gulgan Road Brunswick Heads, Traffic Impact Study (Ingen Consulting, 3 December 2021); and
8. Gulgan Road Brunswick Heads, Civil Engineering Report (Ingen Consulting, December 2021).

Conflict between residential development and industrial land uses may occur where land uses directly abut, or are sufficiently close to, industrial and such that they are likely to be affected by industrial activities. Such conflict can arise from a number of impacts including, but not limited to, noise, dust and odour generating activities.

When considering potential land use conflict between farm residential uses and industrial activities it is important to recognise that all industrial activities:

- should incorporate reasonable and practicable measures to protect the environment in accord with the Protection of the Environment Operations Act (POEO) and associated industry specific guidelines; and
- are legally conducted as required by other legislation covering workplace health and safety.

Nevertheless, certain activities practised by even the most careful and responsible operator may result in a nuisance to an adjacent residential development through, for example, unavoidable odour drift and noise impacts. Typical conflicts between industrial use and residential use as provided in Table 1 below:

Table 1 Typical Conflicts between future Industrial development and existing residential use

Noise	• Industrial equipment, machines, transport. • Ancillary equipment associated with industrial processing • Road Traffic
Odour	• Chemicals. • Fuels
Health concerns	• Chemicals.
Water	• Hydrocarbons in surface and ground water. • Runoff

The actual width of the buffer should in practice be dependent on the most limiting factor involved (i.e., the factor that will require the widest buffer). In theory, this would lead to all other factors being adequately addressed.

Any potential land use conflicts between the proposed future industrial land use and existing residential uses will be considered against a risk assessment matrix to rank the potential Land Use Conflicts in terms of significance. The matrix assesses the environmental/public health and amenity impacts according to the:

- Probability of occurrence; and
- Severity of impact.

The procedure of environmental/public health & amenity hazard identification and risk control are performed in three stages.

1. Environmental/public health & amenity hazard identification;
2. Risk assessment and ranking; and
3. Risk control development.

The proposed development should be designed to minimise instances of incompatibility such that normal industrial practice are not inhibited. Where such instances do arise, measures to ameliorate potential conflicts should be revised wherever possible. This LUCRA has been prepared to assist Council in assessing potential land use conflicts between the proposed industrial zoning at the subject site and the neighbouring farm residential uses.

Illustration 1.1 Site Locality Plan

1.1 Scope of Works

This assessment has been undertaken to determine the potential land use conflicts between the occupiers of a future light industrial subdivision on the subject site and adjoining rural dwellings The subject site is currently used for cattle grazing and residential. The subject site also includes a former cattle dipsite.

The key potential constraints regarding the proposed development include:

- Noise impacts from future Light Industrial Uses on farm residential receivers in the locality.
- Odour from future Light Industrial Uses on farm residential receivers in the locality
- Surface and groundwater impacts from the future Light Industrial Uses on the receiving environment; and

- Soil, surface and groundwater contamination from the existing cattle dipsite on future users at the subject site.

The tasks involved in undertaking this assessment were to:

Step 1: Gather information

- Determine the nature of the land use change and development proposed.
- Assess the nature of the precinct where the land use change and development is proposed.
- Appraise the topography, climate and natural features of the site and broader locality
- Conduct a site inspection
- Describe and record the main activities of the surrounding agricultural land use and their regularity, including periodic and seasonal activities that have the potential to be a source of complaint or conflict.

Step 2: Evaluate the risk level of each activity

- Record each activity on the risk assessment matrix, and identify the level of risk of a land use conflict arising from the activity.

Step 3: Identify the management strategies and responses that could help lower the risk of the issue resulting in a dispute and conflict

- Identify management strategies for each activity
- Prioritise Strategies
- Provide Performance targets for each activity

Step 4: Record the results of the LUCRA

- Summarise the key issues, their risk level, and the recommended management strategies

2. Gather Information

2.1 Nature of the land use change and development proposed

The site is currently used for cattle grazing and for residential, comprising a single residential dwelling, ancillary to farm use. This report has been prepared to accompany a Planning Proposal to Byron Shire Council (BSC) to rezone part of the land for Employment Land Purposes in accordance with Councils BILS Policy.

The preferred land use zoning in the *Byron Shire Business and Industrial Lands Strategy* proposes employment land type development – buildings housing multiple small businesses. The subject land is illustrated in **Illustration 1.1.**

2.2 Nature of the precinct where the land use change and development is proposed

The subject site covers an area of 52.13ha and is located about 3km south west of the Brunswick Heads Central Business District (CBD). The site is accessed via Gulgan Road. The site is currently used for cattle grazing and for residential, comprising a single residential dwelling. A cattle dipsite is located on the subject site.

The immediate locality of the subject lands is the Saddle Road ridge. The subject lands are generally elevated lands along the ridge plateau with the coastal floodplain surrounding the precinct. The subject lands together with about one dozen other properties, generally small rural lifestyle lots, comprise the Saddle Road ridge area. To the north of the subject lands is the main arm of the Brunswick River and habitat areas on the coastal plain.

To the west is steeper land falling to the coastal plain where some sugar cane is currently grown. The sugar cane area (about 740m west of the subject site) is well buffered horizontally and vertically from the subject lands. Beyond Kings Creek is Mullumbimby township.

To the south is Mullumbimby Road and a large number of rural residential lifestyle lots. To the east is Gulgan Road and the Pacific Highway located on the coastal plain. The Pacific Ocean is some 2 kilometres to the east.

The subject site includes Groundwater dependent ecosystems, vegetation classified as *disturbed coastal complex*, includes mapped waterways and has a small area of potential Koala Habitat. Preliminary ecological advice (Bower Ecology August 2021) has identified a number of additional potential ecological attributes which require further assessment and consideration for which buffers are likely to apply:

The subject site includes a cattle dipsite. A Preliminary Site Investigation conducted by Contaminated Site Investigation Australia (CSIA,15 July 2021) identified a Cattle Dipsite. The cattle dipsite is capped and disused. The cattle dipsite is not subject to any type of soil disturbance or use, as part of the proposed rezoning.

A subsequent Cattle Dip Exclusion Zone Assessment by CSIA (18 November 2021), found that surface soils were not impacted at a distance of 10m laterally from the cattle dipsite. To ensure that future occupants of the site do not have access to the former dip area, adopting a precautionary approach, an exclusion perimeter is recommended to be installed at approximately 15m from the dip infrastructure. According to CSIA (2021) additional investigation of the southern portion of the site is not considered to be warranted and the site is deemed suitable for commercial and industrial use.

The NSW Farmland Protection policy identifies the immediate locality of the subject lands as Regionally Significant Farmland and Significant Non-Contiguous Farmland. This mapping for this policy was not property specific as it was undertaken for use at a scale of 1:100,000. A series of agricultural assessment have been undertaken to address the agricultural viability of the subject site and surrounding land.

Illustration 2.1

Subject Site and Surrounding Dwellings

Lot 2 DP1159910 / 66 The Saddle Road, Brunswick Heads

PREPARED BY:
tim fitzroy & associates

2.3 Topography, Climate and Natural Features

The relief of the site varies from 6 to 50mAHD and slopes generally to the south with a low lying valley floor landscape across the southern portion of the site. The site has low rolling hills and rises in the Lismore basalt geological formation. The site has been extensively cleared of native vegetation initially for timber and thereafter for various agricultural pursuits, primarily cattle grazing (see **Appendix A** for Historical Aerial Photography).

Landform patterns present are Low Hills and Floodplain. According to the nature of the landform present, the degree of slope within the site fluctuates between 0% on the lower floodplain and footslope areas to greater than 20% on the upper hillslopes. More gently sloping lands are situated within the site on either side of The Saddle Road which traverses a distinct ridgeline that extends into lands further to the south west of the site. There are a number of natural drainage lines that are situated particularly in the western portions of the site that serve to fragment the land.

A dam is located in a low lying area within the southern central portion of the site. The soils within the subject site are mapped with the *Bangalow* soil landscape group are generally deep well drained alluvial kransozerm. This soil landscape covers the central and southern portion of the subject site. A review of Acid Sulphate Soil Risk Mapping Property Boundaries & Topographic Data: Department Finance, Services & Innovation 2021) indicates an extremely low risk of encountering acid sulfate soil at the subject site.

Significant areas of rock outcrop exist throughout the slope and in particular the mid-slope areas to the south and north of The Saddle Road and Gulgan Road respectively. These outcrops occupy both the steeper and moderately sloping lands.

The site is situated with the sub-tropical climatic zone and the climate can be described as humid sub-tropical, characterised by hot, humid summers and mild winters. Rainfall is seasonally distributed, being concentrated mainly in the summer months.

Climate averages from the Ballina Weather Station over the past 50 years are provided **Table 2.1**. Whilst not replicating the exact onsite weather conditions the Ballina Airport Weather station results provide a good indication of the general weather experienced in the locality.

Wind from the south-easterly quadrant predominates in summer and autumn. South-westerlies are the main winds in winter, whereas in the spring months, wind directions are equally divided between the north and south-east.

Although the strong winds are generally from the south-east and north, strong north-westerly winds, occur approximately one day per month during summer.

Due to its latitude and proximity to the coast, Byron Shire has a coastal sub-tropical climate. As a result, daily temperatures are in the warm to very warm range during summer months (19.5 - 27.5°C) and are milder during winter months (11.7 - 20.3°C). Rainfall is mainly distributed throughout December to June with 1260 mm (72%) of the mean annual rainfall of 1747 mm falling during this period. The highest monthly rainfall occurs in February/March while the months July-September are much drier, generally receiving less than 100 mm each.

Evaporation levels between September and January often exceed rainfall levels. However, as evaporation rates are low during the winter months, rainfall exceeds evaporation on an annual basis (see **Table 2.1**).

2.3.1 Wind Regime

The wind regime for the site is based on annual wind roses for Ballina Airport AWS.

Annual wind roses for the times of 9am and 3pm are shown in **Illustration 2.1**. The wind roses are based on records from 1992 to 2010. The annual wind roses indicate that light to moderate winds are generally experienced from all directions. The wind roses also indicate the following:

- winds in the mornings are typically light winds from the west and south-west and to a lesser extent from the north;
- winds in the afternoon are typically more moderate winds from the south, north-east, south-east and east; and
- Calm conditions are experienced 8% of the time in the morning and only 1% of the time in the afternoons.

The wind frequency towards any of the sensitive receptors is less than 35% if three quadrants are added together (e.g., south east + south-east + south).

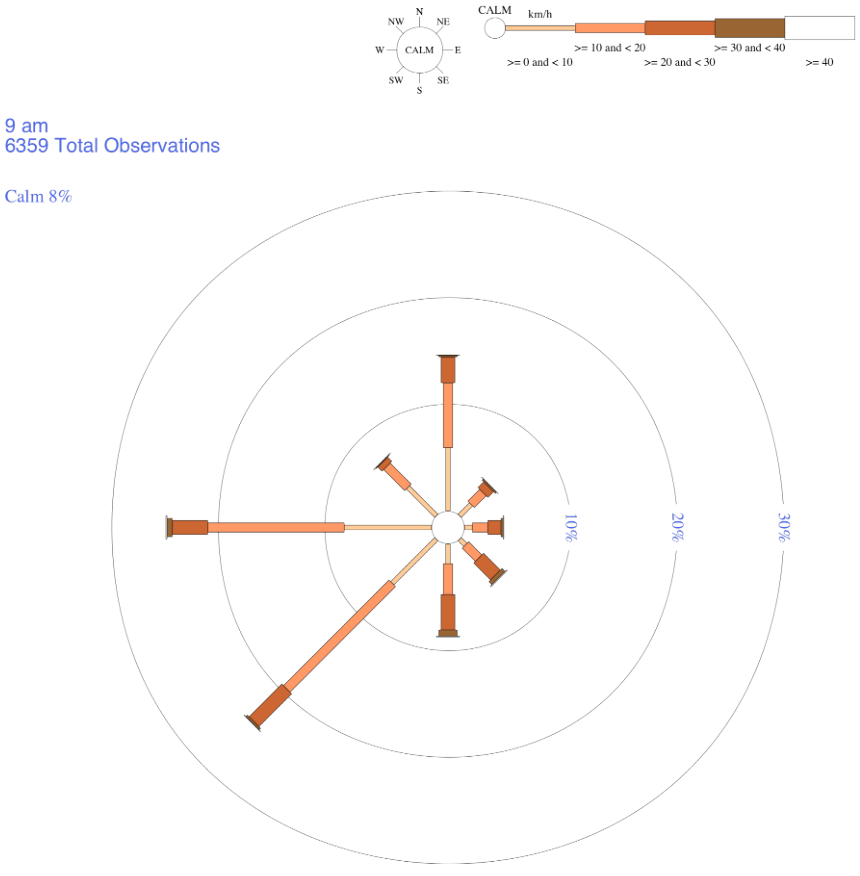
Table 2.1 Monthly Climate Statistics –BALLINA AIRPORT AWS)

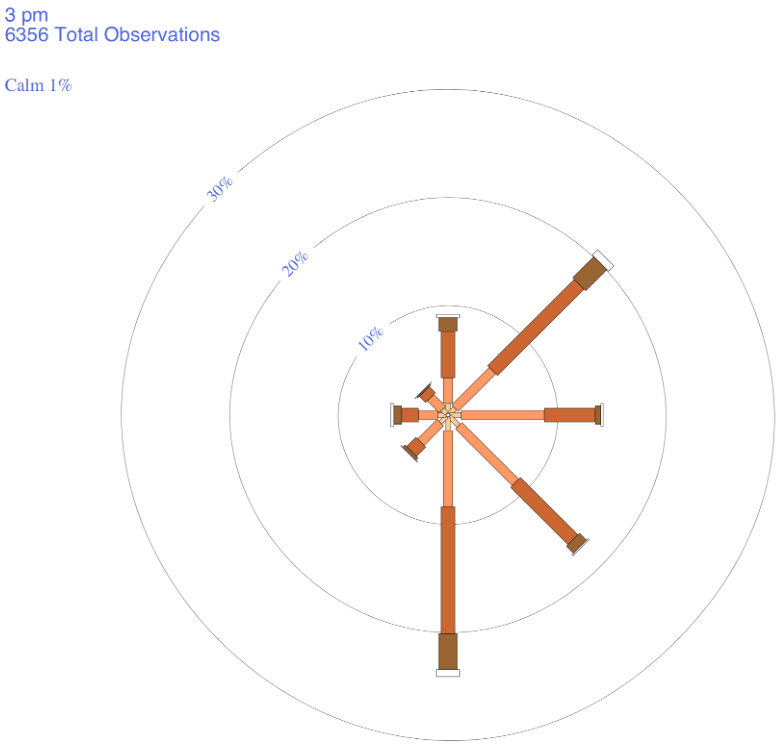
Statistics	***Month***												***Annual***
	J	***F***	***M***	***A***	***M***	***J***	***J***	***A***	***S***	***O***	***N***	***D***	
Mean Max. Temp. (°C)	27.8	27.5	26.4	23.9	21.2	19.3	18.6	20	22	23.6	25.1	26.4	23.5
Mean Min. Temp. (°C)	21.1	21	19.9	17.6	14.9	13.1	12	13.1	15.2	16.9	18.6	19.8	16.9
Mean Rain (mm)	164.4	166.6	127.7	183.5	99.4	164.9	96.3	75.4	47	95.8	93.4	139.3	1509.2
Mean no. rain days	10.8	12	11.6	12.6	10.3	11.5	9.2	5.5	5.5	8.3	8.3	10.6	116.2
9 am conditions													
Mean Temp. (°C)	24.5	23.9	22.5	21.1	18.1	15.5	15.0	16.5	19.7	21.5	22.3	23.9	20.4
Mean Rel. Humid. (%)	74	78	80	75	75	75	72	66	63	66	72	70	72
Mean Wind Spd. (km/h)	13.3	12.8	12.5	13.2	13.5	12.7	13.3	13.3	14.5	15.7	14.2	14.2	13.6
Dominant Direction[1]	SW	SW	SW	SW	W	W	W	W	N & SW	N	N	N	W
3 pm conditions													
Mean Temp. (°C)	26.7	26.5	25.4	23.4	21.0	19.0	18.7	19.8	21.6	22.8	24.4	25.9	22.9
Mean Rel. Humid. (%)	67	68	67	65	64	62	59	55	59	62	65	64	63
Mean Wind Spd. (km/h)	24.4	23.0	21.5	18.9	16.8	15.9	18.1	19.9	23.7	24.8	24.8	24.7	21.4

Statistics	Month												Annual
	J	F	M	A	M	J	J	A	S	O	N	D	
Dominant Direction[1]	NE	NE	SE	S	S	S	S	S	NE	NE	NE	NE	S

Table 2.2 Annual Wind Directions and Strength

Direction	9am	9am Wind Speed	3pm	3pm Wind Speed
N	15%	light	9%	moderate
NE	3%	light	21%	moderate
E	3%	light-moderate	14%	light-moderate
SE	5%	light-moderate	18%	light-moderate
S	9%	light-moderate	24%	light-moderate
SW	24%	light	5%	light
W	25%	light	5%	light-moderate
NW	8%	light	3%	light
Calm	8%	-	1%	-





Source: Bureau of Meteorology

Illustration 2.2 Annual Wind Roses (9am and 3pm) for Ballina Airport

2.4 Site Inspection

A site inspection was conducted by Tim Fitzroy. The site is mostly cleared for grazing. From Gulgan road the site is low lying with a dam in the southern western portion. Most of the site vegetation is located adjoining the dam. The site raises steeply towards The Saddle Road where the road reserve is edged with camphor laurels. There were numerous rocky outcrops on the steeper land. View to the south west and east are extensive from the elevated portion of the site. Photographs of the site subject and surrounds were taken (see **Appendix B**).

2.5 Potential Land Use Conflicts

2.5.1 Air Quality

Potential sources of odour from traffic impacting on the subject site include:

- fine particles, nitrogen oxides, volatile organic compounds such as benzene, toluene, ethylbenzene and xylene (BTEX)

Vehicle exhaust emissions can have a significant influence on local air quality in urban and suburban areas of Australia. Motor vehicles emit a variety of air pollutants that are known to be associated with adverse health impacts. Common air pollutants emitted by motor vehicles include fine particles, nitrogen oxides, volatile organic compounds such as benzene, toluene, ethylbenzene and xylene (BTEX). Exposure to these substances at particular concentrations is associated with a range of short and long term health effects, including on the heart and lungs (WHO 2000, WHO 2003, NEPC 2002, Environment Australia 2001).

Occupants of a dwelling, are likely to be sensitive to emissions from vehicles. Developments located next to busy roads have challenges in terms of how to provide an acceptable level of air quality for the occupants and users of the development.

Patterns of pollutant concentrations vary from site to site and also over time. A wide range of factors influence the level of pollution including: vehicle mix, condition and technology; fuel quality; dispersion of pollutants across a carriageway; weather conditions and traffic flow. The quantity of air pollutants emitted from roads is directly proportional to the traffic volume, speed, and the speed variability (acceleration or braking) of vehicles. Motor vehicles emit fewer pollutants at steady speeds or in freely flowing conditions. They emit greater quantities when accelerating or decelerating, stopping and starting, when in congested traffic or while idling (Quantification of Health Effects of Exposure to Air Pollution, WHO 2000).

Areas that are not confined tend to have greater winds and breezes which in turn disperse and carry away air pollutants. The degree to which winds and breezes carry away air pollutants is influenced by the orientation and continuity of open spaces, their dimension and shape, topography and the layout of buildings surrounding the subject area. Given the limited heavy vehicle movement and cars and the significant buffer to existing dwellings the resultant impact on air quality on existing residents in the locale is deemed to be negligible.

2.5.2 Noise

Typical noise generation by industrial development must be assumed when considering potential landuse conflicts with existing sensitive receivers. The estimated noise levels for the development will provide guidance to Council on potential noise emissions, but are not definitive. Subdivision layout, building design, at source

mitigation, shielding and the times and duration of activities will all impact on the ultimate noise levels produced. Each of these factors cannot yet be defined given the current stage in the planning process.

It is generally accepted however that noise levels within an industrial estate will be higher than in either residential or commercial areas. Commonly, controls are required on noise from industrial premises because of the potential impact on adjacent rural dwellings in the vicinity.

To limit continuing increases in noise levels from application of the intrusiveness level alone, the ambient noise level within an area from all industrial noise sources combined should remain below the recommended amenity noise levels specified in Table 2.2 where feasible and reasonable. The recommended amenity noise levels will protect against noise impacts such as speech interference, community annoyance and some sleep disturbance.

The recommended amenity noise levels have been selected on the basis of studies that relate industrial noise to annoyance in communities (Miedema and Voss, 2004). They have been subjectively scaled to reflect the perceived differential expectations and ambient noise environments of rural, suburban and urban communities for residential receivers. They are based on protecting the majority of the community (90%) from being highly annoyed by industrial noise.

The recommended amenity noise levels represent the objective for total industrial noise at a receiver location, whereas the project amenity noise level represents the objective for noise from a single industrial development at a receiver location. To ensure that industrial noise levels (existing plus new) remain within the recommended amenity noise levels for an area, a project amenity noise level applies for each new source of industrial noise as follows:

Project amenity noise levels from industrial developments = recommended amenity noise levels minus 5 dB(A)

The NPI describes rural – *an area with an acoustical environment that is dominated by natural sounds, having little or no road traffic noise and generally characterised by low background noise levels. Settlement patterns would be typically sparse.*

In accordance with the NPfI (EPA, 2017) the surrounding land use in question is considered to be rural. The amenity criteria and project amenity noise levels for a "rural residential receiver" is presented in **Table 2.1** below

Table 2.1 Project Amenity Noise levels for Rural Receivers

Time Period		*Recommended Amenity Criterion*	*Acceptable Amenity Criterion*
Daytime	(7am-6pm Mon-Sat; 8am-6pm Sun)	50 dB(A)	45 dB(A)
Evening	(6pm-10pm)	45 dB(A)	40 dB(A)
Night	(remaining periods)	40 dB(A)	35 dB(A)

The recommended LAeq noise levels from industrial noise sources within an industrial zone is 70dB (A), when in use, with a recommended maximum LAeq of 75dB (A) Amenity Criteria, (Noise Policy for Industry (NSW EPA, 2017)). These levels represent current best practice for assessing industrial noise sources, based on research and a review of assessment practices used overseas and within Australia.

The NPfI provides guidance on the controls and measures to manage industrial noise and the potential impacts on residential receivers.

In order to achieve the amenity criteria at the closest affected residential properties appropriate mitigation measures may be required. Mitigation measures may include establishing setback distances/buffers, noise wall/mounds, limiting operating hours and/or ensuring that noisy industry and activities are located at the maximum distance possible from sensitive receivers. The allocation of appropriate distance attenuation buffers often afford the most economic mitigation measure where the amenity criteria are exceeded.

Future Development should be designed to minimise the possibility of noise to the occupants of adjoining or neighbouring dwellings. The use of a premise, any plant, equipment and building services associated with a premise does not create an offensive noise or add significantly to the background noise level of a locality. Sources of noise such as garbage collection, machinery, parking areas and air conditioning plants should, where practicable, be sited away from adjoining properties and where necessary, be screened by walls or other acoustical treatment. Without the benefit of a specific development activity a generic set of noise-control measures for the operation of industrial activities is therefore recommended to be implemented where practicable:

- all plant and equipment should be maintained in good working order. Poorly maintained equipment has the potential to result in increased noise emissions;
- plant should be selected with the potential acoustic impacts in mind with a focus on selecting the quietest available plant;
- scheduling the use of noisy equipment at the least-sensitive time of day.
- siting noisy equipment behind structures that act as barriers, or at the greatest distance from the noise-sensitive area; or orienting the equipment so that noise emissions are directed away from any sensitive areas, to achieve the maximum attenuation of noise.
- where there are several noisy pieces of equipment, scheduling operations so they are used separately rather than concurrently keeping equipment well maintained.
- employing ‘quiet’ practices when operating equipment: for example, positioning idling trucks in appropriate areas.
- running staff-education programs on the effects of noise and the use of quiet work practices.
- adjusting reversing alarms on heavy equipment to make them ‘smarter’, by limiting acoustic range to the immediate danger area
- using equipment with efficient muffler design
- using quieter engines, such as electric instead of internal combustion
- damping or lining metal trays or bins

2.5.3 Surface Water, Ground water and Soil and Sediment Runoff

Key environmental issues for industrial uses are:

- Diesel and petrol spills
- Stormwater pollution
- Soil and groundwater contamination

Ecological advice (Bower Ecology August 2021) has identified a number of additional potential ecological attributes which require further assessment and consideration for which buffers are likely to apply: A plan indicating the ecological constraints is provided in **Illustration 2.3**.

2.5.4 Cattle dipsite

The subject site includes a cattle dipsite. A Preliminary Site Investigation conducted by Contaminated Site Investigation Australia (CSIA,15 July 2021) identified a Cattle Dipsite. The cattle dipsite is capped and disused. The cattle dipsite is not subject to any type of soil disturbance or use, as part of the proposed rezoning.

A subsequent Cattle Dip Exclusion Zone Assessment by CSIA (18 November 2021), found that surface soils were not impacted at a distance of 10m laterally from the cattle dipsite. To ensure that future occupants of the site do not have access to the former dip area, adopting a precautionary approach, an exclusion perimeter is recommended to be installed at approximately 15m from the dip infrastructure. According to CSIA (2021) additional investigation of the southern portion of the site is not considered to be warranted and the site is deemed suitable for commercial and industrial use.

2.5.5 Agricultural Uses

The subject and surrounding land is classified as important farmland classification - requiring detailed assessment of agricultural capability and impact on surrounding land as part of any planning proposal consistent with *Environmental Planning and Assessment Act 1979* Section 9.1 Direction 5.3: Farmland of State & Regional Significance on the NSW Far North Coast.

Balanced Advice (2018) examined the agricultural resource capability aspects of the subject land and likely impacts on existing and future agriculture. The assessment concludes the subject lands are not important farmland. The land is not currently important farmland capable of sustaining agricultural production as it is characterised by:

- Being held in multiple ownership
- Being of small land area size
- Large areas of each allotment are constrained by either slope, native vegetation, sheet or boulder surface rock
- Adjoining residences close to the subject lands thus creating potential for land use conflict

This report also seeks to ensure that the following objectives of the S117 Ministerial Directions relating to protecting agricultural resources are upheld:

- ensure that the best agricultural land is available for current and future generations to grow food and fibre
- provide more certainty on the status of the best agricultural land, to assist local government with their local strategic settlement planning

- reduce land use conflict arising between agricultural land use and non-agricultural land use of farmland as caused by urban encroachment into farming areas.

This assessment addressed a range of factors to ascertain whether 'it is possible to produce or run cattle on the area due to the size of the various separate holdings, if cropping could be done on the sites given their size, and limitations to agriculture due to the small size of the holdings.' The assessment reported the current agricultural activity over the subject lands was cattle grazing and described the current agricultural practice as 'hobby farm or lifestyle farms'.

Pasture Grazing Potential and Limitations - The report described the pasture characteristics and highlighted the pasture limitations to grazing as follows:

'A kikuyu/oats pasture for grazing in this location requires high rates of nitrogen fertilizer to be applied. This requires careful management to avoid nitrogen losses to the waterways given the high rainfall of the area. Furthermore, much of the site has rocky outcrops and frequent shallow soils overlying rocks (Figures 8-10). Thus, it is difficult to direct drill oats into the soil without damage to the tines and discs of the sod-seeder, not to mention the slopes of much of the allotments which can be a roll hazard for tractors and other agricultural equipment.'

The report concludes the assessment on the potential for pasture production as follows:
'My assessment is that pasture production could be increased by better management, introduction of legume species into the pastures, better agronomy including weed management with herbicides, application of phosphate and other fertilizers, and perhaps sod seeding with small scale implements if suitable depth of soil can be found. Pasture production would be substantially higher in summer than winter so livestock grazing would have to take this into consideration e.g., buying in stock for summer, fattening and turning them off for winter. A base herd could be maintained but this is still constrained by the available pastoral area on any given allotment. Overall, this strategy could improve the stocking rate but it is unlikely the economics would increase sufficiently to provide a decent living.'

'Alternative land use for other agricultural enterprises is limited. Sheep are not an option nor are alpacas. Likewise, poultry production is hardly an option. Other than existing sugarcane operations, highly profitable sugarcane production9 is much further north in Queensland; this is in largely due to NSW sugarcane being harvested every second year in contrast to annual production in north Queensland.'
'The current practice of running cattle is probably the best option for the area but this is severely limited by land size; in fact, this limitation results in an uneconomic situation.'
Cropping Potential and Limitations - The assessment also addressed the potential for cropping and assessed a range of cropping options. The assessment concluded"
'Due to the rocky outcrops, slopes and shallow soils, cropping in the area is severely limited. There is a narrow band nominally west of the reservoirs (on the top of the 12 ha part of Lot 2, DP 1159910) and an area adjacent to Gulgan Road where it may be feasible to crop in a broadacre sense but even then, these areas are relatively small so small scale equipment would have to be employed.'

This assessment is confirmed by the fact that for past decades the land has been available for the establishment of agricultural enterprises. No such enterprises have occurred other than grazing. The subject lands are not part of a large contiguous area

of important farmland and is isolated from other important farmland by a range of factors including vertical separation, separation by main roads (Pacific Highway, Mullumbimby and Gulgan Roads) and the Brunswick River.

Use of the land as proposed in the Planning Proposal would not increase the likelihood of conflict as no other agricultural production is established within the immediate vicinity. The proposal will result in the removal of some limited Class 3 land and Class 4 grazing land which will have a minimal impact on the regional grazing industry. The findings of this assessment are confirmed by the opinion of NSW Agriculture who, after a site specific assessment with Byron Council officers, provided the following assessment:

'This area located along the ridge line contains limited Class 3 lands. There are areas containing rock floaters and rock shelves. Some soils of the locality appear relatively poor for agriculture which is reflected in the quality of the pasture.'

For the Saddle Road locality, the only potential for land use conflict between agriculture and settlement is to the west of the subject lands as no agriculture is currently occurring or is possible in the future in the directions to the north, east and south. The land to the west is utilised for sugar cane with the current horizontal and vertical separation adequate to provide effective separation distances providing effective buffering.

No future land use conflict with agriculture is anticipated.

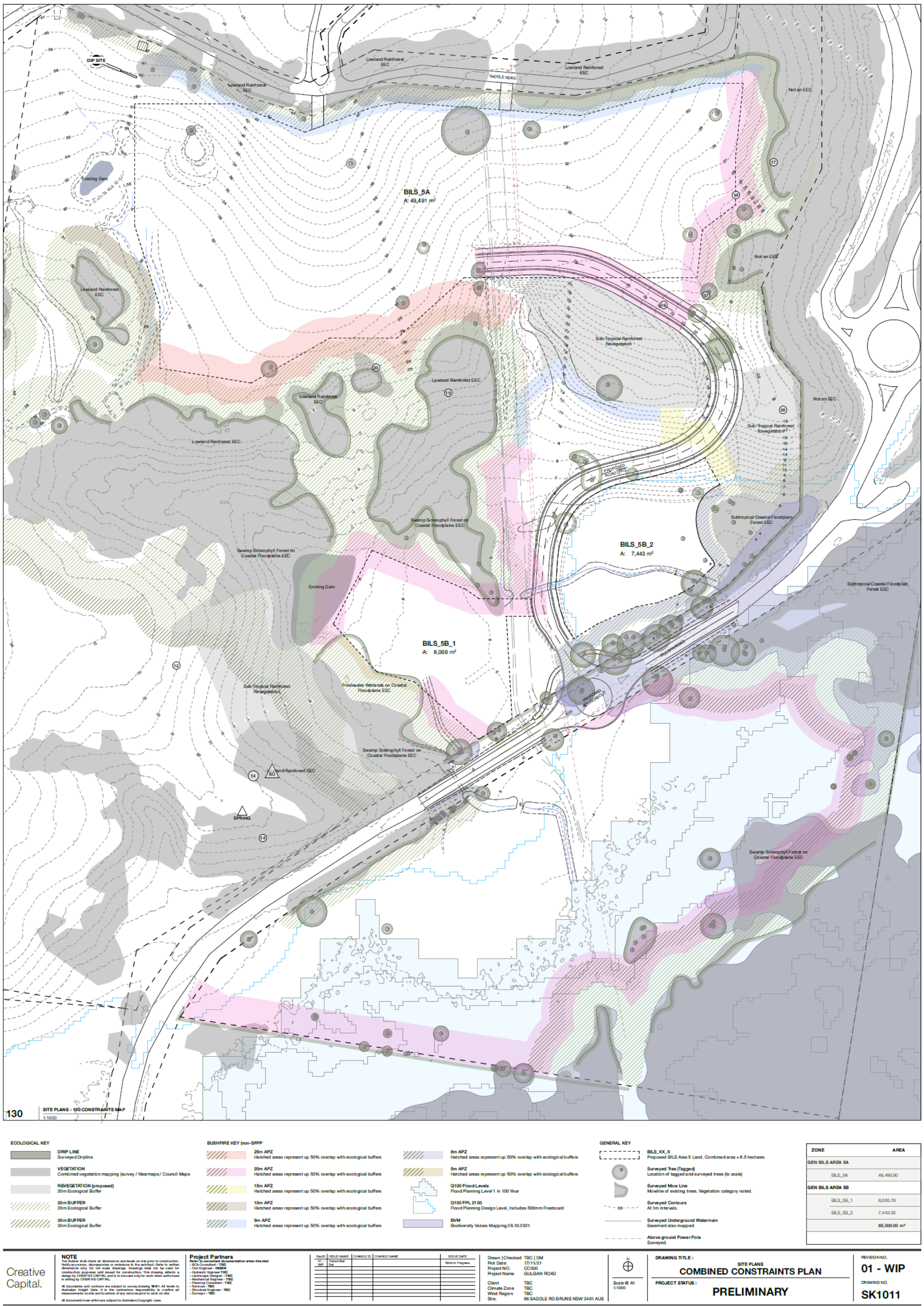
2.5.6 Surface Water and Sediment Runoff

It is not anticipated that future works on the subject site will result in any surface runoff impacting on the adjoining land due to the existing drainage conditions.

2.5.7 Traffic and Access

Details on traffic and access (Ingen Consulting December 2021) indicate that it is unlikely, given the size, orientation and positioning of the subject site that the surrounding land uses will be significantly impacted by vehicle movements on the subject site as a result of a future industrial development. It is noted that heavy vehicles servicing the site will utilise the Gulgan Road entry which is immediately adjacent to the northern boundary of the subject site.

Illustration 2.3 Combined Ecological Constraints



3 Land Use Conflict Risk Assessment

3.1 Introduction

In this report, a risk assessment matrix is used to rank the potential Land Use Conflicts in terms of significance. The matrix assesses the environmental/public health and amenity impacts according to the:

- Probability of occurrence; and
- Severity of impact.

The procedure of environmental/public health & amenity hazard identification and risk control are performed in three stages.

1. Environmental/public health & amenity hazard identification;
2. Risk assessment and ranking;
3. Risk control development.

Procedure:

1. Prepare LUCRA Hazard Identification and Risk Control form.
2. List all hazards associated with each activity.
3. Assess and rank the risk arising from each hazard before “controls” are applied on the LUCRA form.
4. Develop controls that minimise the probability and consequence of each risk using the five level methods. Record these controls on the form.
5. Re-rank each risk with the control in place to ensure that the risk has been reduced to an acceptable level. If the risk ranking is not deemed to be acceptable consideration should be given to whether the proposed activity should be allowed to proceed.

3.2 Risk Assessment and Risk Ranking

It is necessary to differentiate between an 'environmental hazard' and an 'environmental risk'. 'Hazard' indicates the potential for harm, while 'risk' refers to the probability of that harm occurring. For example, the presence of chemicals stored in a building is a hazard, but while the chemicals are stored appropriately, the risk is negligible. **Table 3.1** defines the hazard risks used in this report.

The Risk Ratings (severity of the risks) have been established by assessing the consequences of the risks and the likelihood of the risks occurring.

Table 3.1 Measure of Consequence

Level	Descriptor	Description	Examples/Implications
1	Severe	▪ Severe and/or permanent damage to the environment ▪ Irreversible with management	▪ Damage or death to animals, fish, birds or plants ▪ Long term damage to soil or water ▪ Odours so offensive some people are evacuated or leave voluntarily ▪ Many public complaints and serious damage to Council's reputation ▪ Contravenes Protection of the Environment & Operations Act and the conditions of Council's licences and permits. Almost certain prosecution under the POEO Act
2	Major	▪ Serious and/or long-term impact to the environment ▪ Long-term management implications	▪ Water, soil or air impacted badly, possibly in the long term. ▪ Limited damage to animals, fish or birds or plants ▪ Some public complaints Impacts pass quickly ▪ Contravenes the conditions of Council's licences, permits and the POEO Act ▪ Likely prosecution
3	Moderate	▪ Moderate and/or medium-term impact to the environment ▪ Some ongoing management implications	▪ Water, soil or air known to be affected, probably in the short term ▪ No damage to plants or animals ▪ Public unaware and no complaints to Council ▪ May contravene the conditions of Council's Licences and the POEO Act ▪ Unlikely to result in prosecution
4	Minor	▪ Minor and/or short-term impact to the environment ▪ Can be effectively managed as part of normal operations	▪ Theoretically could affect the environment or people but no impacts noticed ▪ No complaints to Council ▪ Does not affect the legal compliance status of Council

Level	Descriptor	Description	Examples/Implications
5	Negligible	▪ Very minor impact to the environment ▪ Can be effectively managed as part of normal operations	▪ No measurable or identifiable impact on the environment

This report utilises an enhanced measure of likelihood of risk approach which provides for 5 levels of probability (A-E). The 5 levels of probability are set out below in **Table 3.2.**

Table 3.2 Probability Table

Level	Descriptor	Description
A	Almost certain	Common or repeating occurrence
B	Likely	Known to occur, or 'it has happened'
C	Possible	Could occur, or 'I've heard of it happening'
D	Unlikely	Could occur in some circumstances, but not likely to occur
E	Rare	Practically impossible

3.3 Risk Ranking Method

For each event, the appropriate 'probability' (i.e., a letter A to E) and 'consequence' (i.e., a number 1 to 5) is selected.

The consequences (environmental impacts) are combined with a 'probability' (of those outcomes) in the Risk Ranking Table (Table 3.3) to identify the risk rank of each environmental impact (e.g., a 'consequence' 3 with 'probability 'D yields a risk rank 9).

The table yields a risk rank from 25 to 1 for each set of 'probabilities' and 'consequences'. A rank of 25 is the highest magnitude of risk that is a highly likely, very serious event.

A rank of 1 represents the lowest magnitude or risk, an almost impossible, very low consequence event.

Table 3.3 Risk Ranking Table

PROBABILITY	A	B	C	D	E
Consequence					
1	25	24	22	19	15
2	23	21	18	14	10
3	20	17	13	9	6
4	16	12	8	5	3
5	11	7	4	2	1

NOTE
A risk ranking of 25-11 is deemed as an unacceptable risk.
A risk ranking of 10-1 is deemed as an acceptable risk.

Thus, the objective is to endeavour to identify and define controls to lower risk to a ranking of 10 or below.

3.4 Risk Reduction Controls

The process of risk reduction is one of looking at controls that have an effect on probability such as the implementation of certain procedures; new technology or scientific controls that might lower the risk probability values.

It is also appropriate to look at controls which affect consequences e.g., staff supply with a mechanism to change impacts or better communications established. Such matters can sometimes lead to the lowering of the consequences.

Table 3.4 LUCRA Site Assessment

Site Feature	Condition/Comments	Potential Conflict
Buffer Distances to Dwellings	The closest distance from the proposed Light Industrial zone to an existing dwelling is 174m Neither Table 6 of the *Living and Working in Rural Areas Handbook (2007)* or Chapter 6B *Byron Development Control Plan 2014* nominate a default buffer between Industrial uses and rural dwellings.	Minor
Buffer Distance to Cattle Dipsite	The closest distance from the proposed Light Industrial zone to the cattle dipsite is about 34m Neither Table 6 of the *Living and Working in Rural Areas Handbook (2007)* or Chapter 6B *Byron Development Control Plan 2014* nominate a default buffer between Industrial uses and cattle dipsites. A Preliminary Site Investigation conducted by Contaminated Site Investigation Australia (CSIA,15 July 2021) identified a Cattle Dipsite. The cattle dipsite is capped and disused. The cattle dipsite is not subject to any type of soil disturbance or use, as part of the proposed rezoning. A subsequent Cattle Dip Exclusion Zone Assessment by CSIA (18 November 2021), found that surface soils were not impacted at a distance of 10m laterally from the cattle dipsite. To ensure that future occupants of the site do not have access to the former dip area, adopting a precautionary approach, an exclusion perimeter is recommended to be installed at approximately 15m from the dip infrastructure. According to CSIA (2021) additional investigation of the southern portion of the site is not considered to be warranted and the site is deemed suitable for commercial and industrial use.	Minor

Site Location: Vehicular Access	Details on traffic and access have not been articulated however it is unlikely, given the size, orientation and positioning of the subject site that the surrounding landuses will be significantly impacted by vehicle movements on the subject site as a result of a future residential development. It is noted that heavy vehicles servicing the Gulgan Road	Minor
Exposure	At 9am the dominant wind is from the south (37%), while at 3pm the dominant wind direction is mixed between south east (34%) and northerly (31%) (BOM 2021)	Low
Run-on and Upslope Seepage Site Drainage and Water pollution	Run-on or seepage from future development on the subject site on ongoing farm activities on the adjoining farmland will be negligible. The existing topography encourages runoff to the south of the property. The soils within the subject site are generally red basaltic – landscape variant. They are generally deep well drained alluvial kransozerm. With a total area of over 50ha there is ample capacity to assimilate and buffer water quality impacts on the site.	Low
Noise	Typical noise generation by industrial development must be assumed when considering potential landuse conflicts with existing sensitive receivers. The estimated noise levels for the development will provide guidance to Council on potential noise emissions, but are not definitive. Subdivision layout, building design, at source mitigation, shielding and the times and duration of activities will all impact on the ultimate noise levels produced. Each of these factors cannot yet be defined given the current stage in the planning process. Future noise modelling of a proposed industrial subdivision would consider a variety of measures including building placement, orientation, layout and/or shell treatment at source mitigation, shielding and the times and duration of activities that could be utilised to reduce noise impacts. Given the restriction to light industrial development, the benefits of existing distance attenuation, no direct line of sight due topographical shielding between the proposed rezoning and existing farm dwellings, the resultant noise decay the likelihood of conflicts are predicted to be minor	Minor
Ecological	Ecological assessment (Bower Ecology December 2021) Plant Community Types and associated Endangered Ecological Communities (EECs) were mapped during the ecological survey undertaken for this assessment. Five native Plant Community types were recorded on the	Minor

	property, four of which represent EECs. Vegetation on the property includes isolated patches of rainforest, small areas of swamp sclerophyll and floodplain forest, and freshwater wetlands (sedgelands/forblands). There is also a constructed farm dam as well as minor drainage lines on the property. One of the drainage lines is within the site footprint and will likely require diversion as part of any future development. As part of the driving concept, the native vegetation patches on the site have been buffered and are largely outside of the proposed footprint. Nonetheless, a small area (<0.1ha) of derived EEC may require removal as part of any future development of the site. To avoid ecological impacts, a majority of the proposed Planning Proposal area (the site) intentionally overlays exiting paddock areas, which are dominated by exotic grasses and forbs and have been subject to grazing. During the survey, three threatened species were observed on the property. These were the White-bellied Sea Eagle which was flying over the site (foraging), and the threatened flora species Tinospora tinosporoides and Cryptocaria foetida. The observed threatened flora were not within the proposed site. It is not expected that a significant impact to threatened species will result if the site is developed, however further assessment during future development applications will be required. If development is enabled by approval of the Planning Proposal, the resultant ecological impacts are likely to be minor overall, whilst there is also opportunity for further impact reduction via future DA design and environmental management.	
Agricultural Uses	Neither Table 6 of the *Living and Working in Rural Areas Handbook (2007)* or Chapter 6B *Byron Development Control Plan 2014* nominate a default buffer between Industrial uses and agricultural uses. For the Saddle Road locality, the only potential for land use conflict between agriculture and settlement is to the west of the subject lands as no agriculture is currently occurring or is possible in the future in the directions to the north, east and south. The land to the west is utilised for sugar cane and cattle grazing with the current horizontal and vertical separation adequate to provide effective separation distances providing effective buffering. No future land use conflict with agriculture is anticipated.	Negligible

The areas of moderate potential conflict outlined in **Table 3.4** will be addressed through the following **Risk Reduction Controls** outlined in **Table 3.5**.

Table 3.5 Hazard Identification and Risk Control Sheet

Activity	Identified Hazard	Risk Ranking	Method of Control	Controlled Ranking
Noise	Light Industrial Use Car Movements Truck Movements	**D4=5 Acceptable**	Typical noise generation by industrial development must be assumed when considering potential landuse conflicts with existing sensitive receivers. The estimated noise levels for the development will provide guidance to Council on potential noise emissions, but are not definitive. Subdivision layout, building design, at source mitigation, shielding and the times and duration of activities will all impact on the ultimate noise levels produced. Each of these factors cannot yet be defined given the current stage in the planning process. Future noise modelling of a proposed industrial subdivision would consider a variety of measures including building placement, orientation, layout and/or shell treatment at source mitigation, shielding and the times and duration of activities that could be utilised to reduce noise impacts. Given the restriction to light industrial development, the benefits of existing distance attenuation, no direct line of sight due topographical shielding between the proposed rezoning and existing dwellings, the resultant noise decay the likelihood of conflicts are predicted to be minor	**D4=5 Acceptable**
Buffer Distances to Existing Farm Dwellings	The closest distance from the proposed Light Industrial zone to an existing dwelling is 275m Neither Table 6 of the *Living and Working in Rural Areas Handbook (2007)* or Chapter 6B *Byron Development Control Plan 2014 nominate a default buffer* between Industrial uses and rural dwellings	**D4=5 Acceptable**	There are no default buffer distance between light industrial uses and rural dwellings. Given the distance attenuation, no direct line of sight due topographical shielding and the light industrial uses the likelihood of land use conflict is deemed to be negligible	**D4 = 5 Acceptable**
Buffer Distance to Cattle Dipsite	The closest distance from the proposed Light Industrial zone to the cattle dipsite is about 120m Neither Table 6 of the *Living and Working in Rural Areas Handbook (2007)* or Chapter 6B *Byron Development Control Plan 2014 nominate a default buffer* between Industrial uses and cattle dipsites.	**D4=5 Acceptable**	Neither Table 6 of the *Living and Working in Rural Areas Handbook (2007)* or Chapter 6B *Byron Development Control Plan 2014* nominate a default buffer between Industrial uses and cattle dipsites. A Preliminary Site Investigation conducted by Contaminated Site Investigation Australia (CSIA,15 July 2021) identified a Cattle Dipsite. The cattle dipsite is capped and disused. The cattle dipsite is not subject to any type of soil disturbance or use, as part of the proposed rezoning. A subsequent Cattle Dip Exclusion Zone Assessment by CSIA (18 November 2021), found that surface soils were not impacted at a distance of 10m laterally from the cattle dipsite. To ensure that future occupants of the site do not have access to the former dip area, adopting a precautionary approach, an exclusion perimeter is recommended to be installed at approximately 15m from the dip infrastructure. According to CSIA (2021) additional investigation of the southern portion of the site is not considered to be warranted and the site is deemed suitable for commercial and industrial use.	**D4=5 Acceptable**
Ecology	The subject site includes Groundwater dependent ecosystems, vegetation classified as *disturbed coastal complex*, includes mapped waterways and has a small area of potential Koala Habitat.	**D4=5 Acceptable**	Ecological assessment (Bower Ecology December 2021) Plant Community Types and associated Endangered Ecological Communities (EECs) were mapped during the ecological survey undertaken for this assessment. Five native Plant Community types were recorded on the property, four of which represent EECs. Vegetation on the property includes isolated patches of rainforest, small areas of swamp sclerophyll and floodplain forest, and freshwater wetlands (sedgelands/forblands). There is also a constructed farm dam as well as minor drainage lines on the property. One of the drainage lines is within the site footprint and will likely require diversion as part of any future development. As part of the driving concept, the native vegetation patches on the site have been buffered and are largely outside of the proposed footprint. Nonetheless, a small area (<0.1ha) of derived EEC may require removal as part of any future	**D4=5 Acceptable**

			development of the site. To avoid ecological impacts, a majority of the proposed Planning Proposal area (the site) intentionally overlays exiting paddock areas, which are dominated by exotic grasses and forbs and have been subject to grazing. During the survey, three threatened species were observed on the property. These were the White-bellied Sea Eagle which was flying over the site (foraging), and the threatened flora species Tinospora tinosporoides and Cryptocaria foetida. The observed threatened flora were not within the proposed site. It is not expected that a significant impact to threatened species will result if the site is developed, however further assessment during future development applications will be required. If development is enabled by approval of the Planning Proposal, the resultant ecological impacts are likely to be minor overall, whilst there is also opportunity for further impact reduction via future DA design and environmental management.	
Agriculture	Noise, chemical use, odour, aerial sprays	**D4=5 Acceptable**	Neither Table 6 of the *Living and Working in Rural Areas Handbook (2007)* or Chapter 6B *Byron Development Control Plan 2014 nominate a default buffer* between Industrial uses and agriculture. For the Saddle Road locality, the only potential for land use conflict between agriculture and settlement is to the west of the subject lands as no agriculture is currently occurring or is possible in the future in the directions to the north, east and south. The land to the west is utilised for sugar cane and cattle grazing with the current horizontal and vertical separation adequate to provide effective separation distances providing effective buffering. No future land use conflict with agriculture is anticipated.	**D4=5 Acceptable**
Site Location: Vehicular Access	Heavy vehicles servicing the site	**D4=5 Acceptable**	Details on traffic and access have not been articulated however it is unlikely, given the size (50ha), orientation and positioning of the subject site that the surrounding landuses will be significantly impacted by vehicle movements on the subject site as a result of a future industrial development.	**D4=5 Acceptable**
Water Pollution	Run-on, seepage, water pollution	**D4=5 Acceptable**	Run-on or seepage from future development on the subject site on ongoing farm activities on the adjoining farmland will be negligible. The existing topography encourages runoff to the south of the property. The soils within the subject site are generally red basaltic – landscape variant. They are generally deep well drained alluvial kransozerm. With a total area of over 50ha there is ample capacity to assimilate and buffer water quality impacts on the site.	**D4=5 Acceptable**

4 Conclusions and Recommendations

This Land Use Conflict Risk Assessment is based on:

- a review of Concept Plans;
- a review of the following documents:
    - Preliminary Site investigation (Contaminated Land Investigation Australia, July 2021);
    - Cattle Dip Exclusion Zone Assessment (Contaminated Land Investigation Australia, November 2021);
    - Agricultural Assessment – Lot 2, DP 1159910, Brunswick Heads (Allen & Associates, 2021);
    - DPI Consultation (Balanced Advice, 2018);
    - Report on Agricultural Activities, Saddle Road, Brunswick Heads, NSW (Dr LC Campbell, Sydney Institute of Agriculture, Sydney University, 2018);
    - Area 5 Gulgan North Planning Proposal Ecological Assessment Report (Bower Ecology, 9 December 2021);
    - Gulgan Road Brunswick Heads, Traffic Impact Study (Ingen Consulting, 3 December 2021);
    - Gulgan Road Brunswick Heads, Civil Engineering Report (Ingen Consulting, December 2021);
- a review of surrounding land uses; and
- a site inspection.

A site inspection coupled with a review of aerial photography (see **Illustration 2.2**) has identified the nearest affected offsite dwellings:

1 Dwelling 1 to the west (Lot 21 DP740271) No 10 The Saddle Road;
2 Dwelling 2 to the north west (Lot 31 DP 1018929) No 84 The Saddle Road;
3 Dwelling 3 to the north (Lot 1 DP 583377) No 82 The Saddle Road;
4 Dwelling 4 to the south west (Lot 1 DP 555377) No 174 The Saddle Road; and
5 Dwelling 5 to the south west (Lot 1 DP 301709) No 285 Gulgan Road.

The closest distance from the proposed Light Industrial zone to:

6. Dwelling 1 is 230m;
7. Dwelling 2 is 174m;
8. Dwelling 3 is 234m;
9. Dwelling 4 is 697m; and
10. Dwelling 5 is 538m.

The Key Outcomes of this LUCRA are as follows:

1 Noise Impacts from Light Industrial Uses on existing Rural Dwellings

Typical noise generation by industrial development must be assumed when considering potential landuse conflicts with existing sensitive receivers. The estimated

noise levels for the development will provide guidance to Council on potential noise emissions, but are not definitive. Subdivision layout, building design, at source mitigation, shielding and the times and duration of activities will all impact on the ultimate noise levels produced. Each of these factors cannot yet be defined given the current stage in the planning process.

Future noise modelling of a proposed industrial subdivision would consider a variety of measures including building placement, orientation, layout and/or shell treatment at source mitigation, shielding and the times and duration of activities that could be utilised to reduce noise impacts.

Given the restriction to light industrial development, the benefits of existing distance attenuation between the proposed rezoning and existing farm dwellings, the resultant noise decay the likelihood of conflicts are predicted to be minor. The risk is D4=5 and deemed to be acceptable.

2 Buffers from Light Industrial zone to existing rural dwellings

The closest distance from the proposed Light Industrial zone to an existing dwelling is 174m. There is no direct line of site due to topographical shielding.

Neither Table 6 of the *Living and Working in Rural Areas Handbook (2007)* or Chapter 6B *Byron Development Control Plan 2014* nominate a default buffer between Industrial uses and rural dwellings.

Given the distance attenuation and the light industrial uses the likelihood of land use conflict is deemed to be minor Risk ranking is D4 = 5 Acceptable

3 Site Location: Vehicular Access

Details on traffic and access have not been articulated however it is unlikely, given the size (50ha), orientation and positioning of the subject site that the surrounding landuses will be significantly impacted by vehicle movements on the subject site as a result of a future industrial development.

The risk is D4=5 and deemed to be acceptable.

4 Ecology

The subject site includes Groundwater dependent ecosystems, vegetation classified as *disturbed coastal complex*, includes mapped waterways and has a small area of potential Koala Habitat

Ecological assessment (Bower Ecology December 2021) Plant Community Types and associated Endangered Ecological Communities (EECs) were mapped during the ecological survey undertaken for this assessment. Five native Plant Community types were recorded on the property, four of which represent EECs. Vegetation on the property includes isolated patches of rainforest, small areas of swamp sclerophyll and floodplain forest, and freshwater wetlands (sedgelands/forblands). There is also a constructed farm dam as well as minor drainage lines on the property. One of the drainage lines is within the site footprint and will likely require diversion as part of any future development.

As part of the driving concept, the native vegetation patches on the site have been buffered and are largely outside of the proposed footprint. Nonetheless, a small area (<0.1ha) of derived EEC may require removal as part of any future development of the site.
To avoid ecological impacts, a majority of the proposed Planning Proposal area (the site) intentionally overlays exiting paddock areas, which are dominated by exotic grasses and forbs and have been subject to grazing.
During the survey, three threatened species were observed on the property. These were the White-bellied Sea Eagle which was flying over the site (foraging), and the threatened flora species Tinospora tinosporoides and Cryptocaria foetida. The observed threatened flora were not within the proposed site. It is not expected that a significant impact to threatened species will result if the site is developed, however further assessment during future development applications will be required.
If development is enabled by approval of the Planning Proposal, the resultant ecological impacts are likely to be minor overall, whilst there is also opportunity for further impact reduction via future DA design and environmental management.

The risk is D4=5 and deemed to be acceptable,

5 Buffer Distances to Agriculture

Neither Table 6 of the *Living and Working in Rural Areas Handbook (2007)* or Chapter 6B *Byron Development Control Plan 2014 nominate a default buffer* between Industrial uses and agriculture.

For the Saddle Road locality, the only potential for land use conflict between agriculture and settlement is to the west of the subject lands as no agriculture is currently occurring or is possible in the future in the directions to the north, east and south. The land to the west is utilised for sugar cane and cattle grazing with the current horizontal and vertical separation adequate to provide effective separation distances providing effective buffering.

No future land use conflict with agriculture is anticipated.

The risk is D4=5 and deemed to be acceptable.

6 Buffer to Cattle Dipsite

The closest distance from the proposed Light Industrial zone to the cattle dipsite is about 34m.

Neither Table 6 of the *Living and Working in Rural Areas Handbook (2007)* or Chapter 6B *Byron Development Control Plan 2014 nominate a default buffer* between Industrial uses and cattle dipsites.

A Preliminary Site Investigation conducted by Contaminated Site Investigation Australia (CSIA,15 July 2021) identified a Cattle Dipsite. The cattle dipsite is capped and disused. The cattle dipsite is not subject to any type of soil disturbance or use, as part of the proposed rezoning.

A subsequent Cattle Dip Exclusion Zone Assessment by CSIA (18 November 2021), found that surface soils were not impacted at a distance of 10m laterally from the cattle dipsite. To ensure that future occupants of the site do not have access to the former dip area, adopting a precautionary approach, an exclusion perimeter is recommended to be installed at approximately 15m from the dip infrastructure. According to CSIA (2021) additional investigation of the southern portion of the site is not considered to be warranted and the site is deemed suitable for commercial and industrial use.

The risk is D4=5 and deemed to be acceptable.

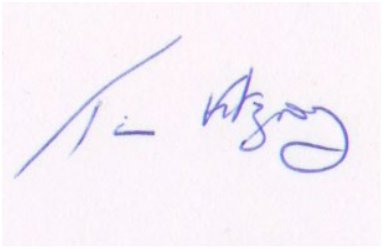
7 Water Pollution

Run-on or seepage from future development on the subject site on ongoing farm activities on the adjoining farmland will be negligible. The existing topography encourages runoff to the south of the property. The soils within the subject site are generally red basaltic – landscape variant. They are generally deep well drained alluvial kransozerm.

With a total area of over 50ha there is ample capacity to assimilate and buffer water quality impacts on the site.

The risk is D4=5 and deemed to be acceptable.

This report has been prepared by Tim Fitzroy of *Tim Fitzroy & Associates.*



Tim Fitzroy
Environmental Health Scientist
Environmental Auditor

References

Department of Primary Industries et al 2007 Living and Working in Rural Areas-a handbook for managing land use conflicts on the NSW North Coast, NSW

Byron Shire Council, 2014 Development Control Plan

Noise Policy for Industry (NSW EPA 2017)

National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013

Preliminary Site investigation (Contaminated Land Investigation Australia, July 2021);

Cattle Dip Exclusion Zone Assessment (Contaminated Land Investigation Australia, November 2021)

Agricultural Assessment – Lot 2, DP 1159910, Brunswick Heads (Allen & Associates, 2021)

DPI Consultation (Balanced Advice, 2018)

Report on Agricultural Activities, Saddle Road, Brunswick Heads, NSW (Dr LC Campbell, Sydney Institute of Agriculture, Sydney University, 2018)

Area 5 Gulgan North Planning Proposal Ecological Assessment Report (Bower Ecology, 9 December 2021)

Gulgan Road Brunswick Heads, Traffic Impact Study (Ingen Consulting, 3 December 2021)

Gulgan Road Brunswick Heads, Civil Engineering Report (Ingen Consulting, December 2021).

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Dataset Listing

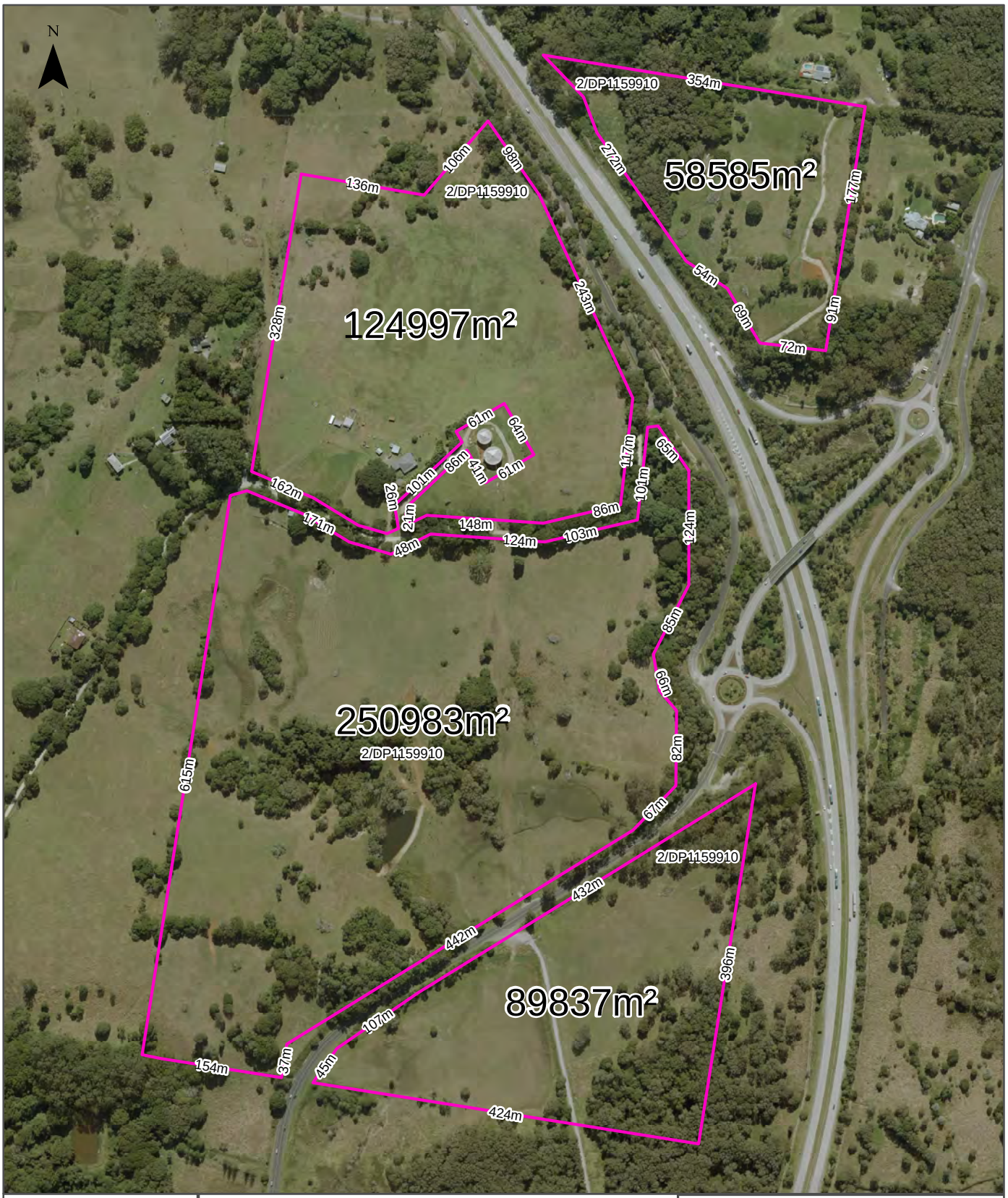
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Finance, Services & Innovation	20/08/2021	20/08/2021	Quarterly	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	08/09/2021	08/09/2021	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	06/09/2021	06/09/2021	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	11/08/2021	11/10/2017	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	12/05/2021	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	15/02/2021	13/07/2012	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	23/08/2021	28/04/2021	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	02/08/2021	02/08/2021	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	02/08/2021	02/08/2021	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	06/09/2021	06/09/2021	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	19/08/2021	19/08/2021	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	02/02/2021	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	16/08/2021	16/08/2021	Monthly	1000m	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	16/08/2021	16/08/2021	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	16/08/2021	16/08/2021	Monthly	1000m	4	6	7
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	13
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Cattle dips of the Northern Rivers region	NSW Dept. of Primary Industries	15/02/2021	15/02/2021	Annually	1000m	1	1	1
Points of Interest	NSW Department of Finance, Services & Innovation	19/08/2021	19/08/2021	Quarterly	1000m	0	0	11
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	2	2
Major Easements	NSW Department of Finance, Services & Innovation	19/08/2021	19/08/2021	Quarterly	1000m	0	0	5
State Forest	Forestry Corporation of NSW	25/02/2021	14/02/2021	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	22/01/2021	11/12/2020	Annually	1000m	0	1	2
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	26/10/2020	21/02/2018	Annually	1000m	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000m	1	1	113
Geological Units 1:250,000	NSW Department of Planning, Industry and Environment	20/08/2014		Annually	1000m	3	3	5
Geological Structures 1:250,000	NSW Department of Planning, Industry and Environment	20/08/2014		Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	2	3
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	14/10/2020	27/07/2020	Annually	1000m	3	3	8
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	19/08/2021	28/06/2021	Monthly	500m	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	2	2	3
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	0	0	1
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	19/08/2021	05/08/2021	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	03/08/2021	03/08/2021	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	03/08/2021	03/08/2021	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	03/08/2021	03/08/2021	Monthly	1000m	11	11	11
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	19/08/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	19/08/2021	13/08/2021	Monthly	1000m	4	6	39
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	19/08/2021	25/06/2021	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	19/08/2021	13/08/2021	Monthly	1000m	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	06/09/2021	23/08/2021	Weekly	1000m	3	3	3
Eastern Bushland Database (North Region)	NSW Office of Environment & Heritage	24/07/2016	01/01/1991	None planned	1000m	3	3	3
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	24/02/2021	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Annually	1000m	3	3	10
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000m	10	13	24
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	06/09/2021	06/09/2021	Weekly	10000m	-	-	-

Site Diagram

66 the Saddle Road, Brunswick Heads, NSW 2483



Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 524403m²

Total Perimeter: 6.72km

Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Scale: 0 25 50 100 150 200 250 Meters

Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 56

Date: 09 September 2021

Contaminated Land

66 the Saddle Road, Brunswick Heads, NSW 2483

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
N/A	No records in buffer								

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

66 the Saddle Road, Brunswick Heads, NSW 2483

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority

Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority

Waste Management & Liquid Fuel Facilities

66 the Saddle Road, Brunswick Heads, NSW 2483

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist	Direction
N/A	No records in buffer											

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
N/A	No records in buffer										

PFAS Investigation & Management Programs

66 the Saddle Road, Brunswick Heads, NSW 2483

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Map ID	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

66 the Saddle Road, Brunswick Heads, NSW 2483

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

66 the Saddle Road, Brunswick Heads, NSW 2483

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority

EPA Activities

66 the Saddle Road, Brunswick Heads, NSW 2483

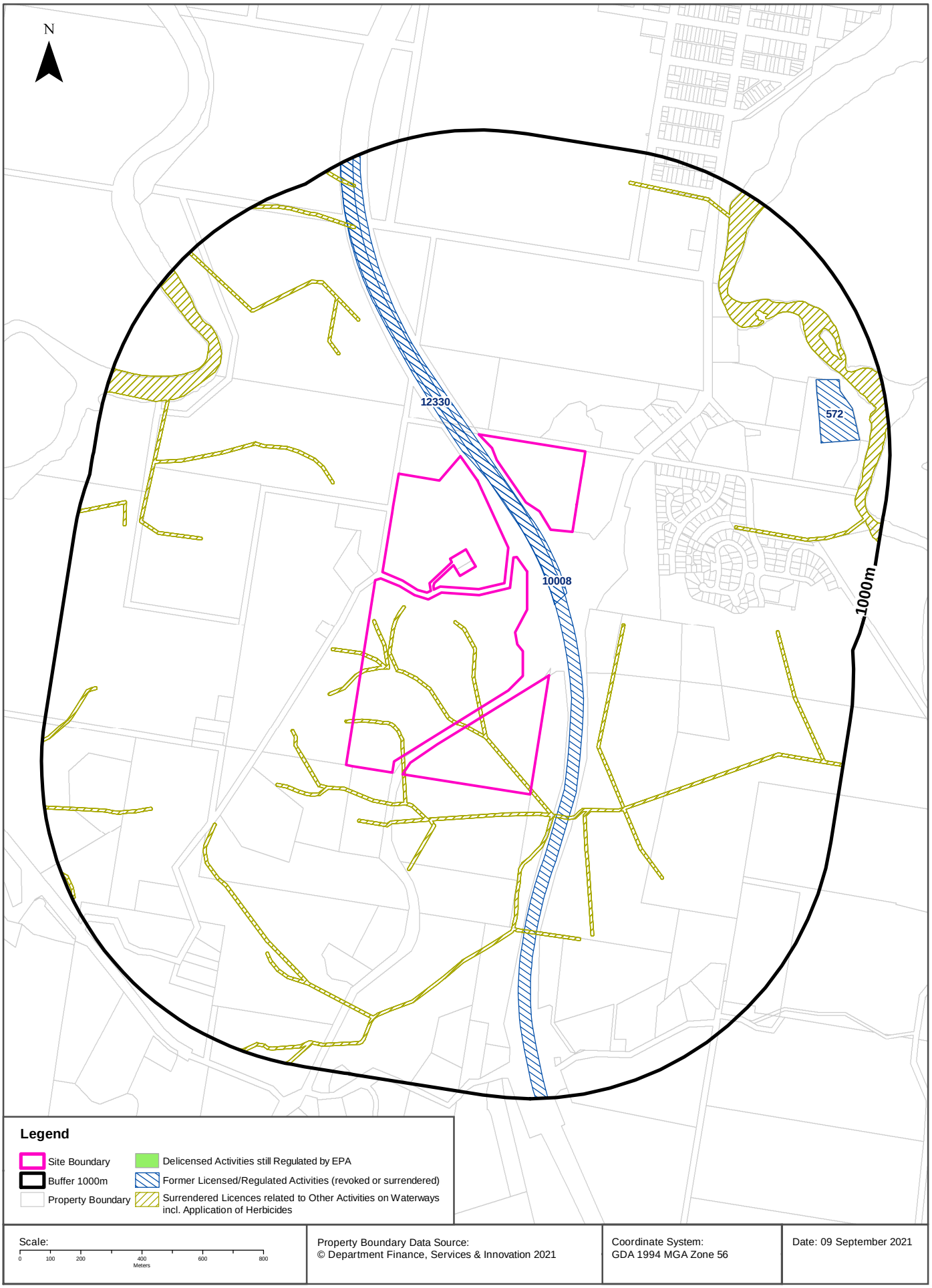
Licensed Activities under the POEO Act 1997

Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

Delicensed & Former Licensed EPA Activities

66 the Saddle Road, Brunswick Heads, NSW 2483



EPA Activities

66 the Saddle Road, Brunswick Heads, NSW 2483

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

Delicensed Activities Data Source: Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

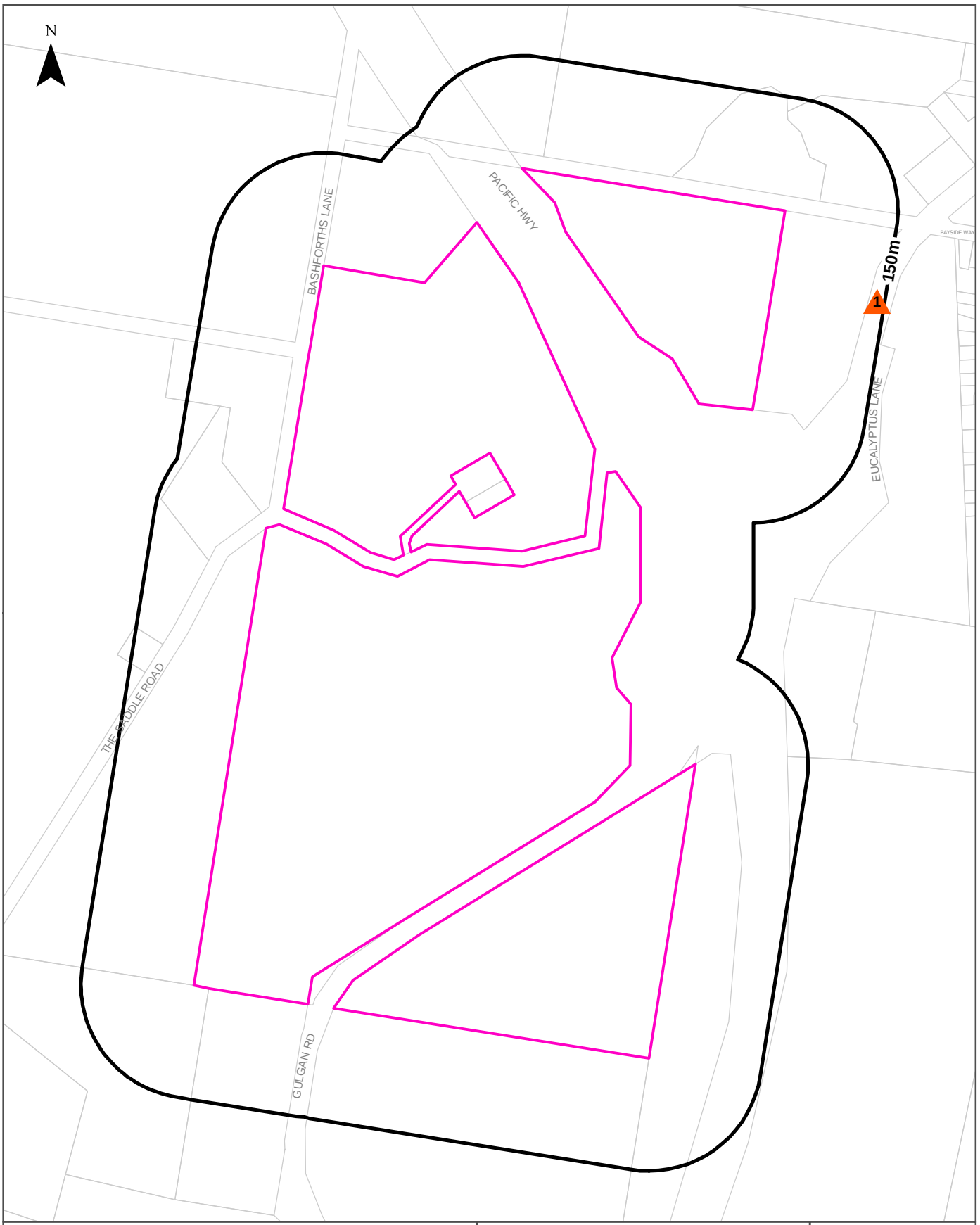
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4292	FAR NORTH COAST COUNTY COUNCIL	COUNTY DISTRICT - LISMORE NSW 2480	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
10008	ROADS & TRAFFIC AUTHORITY OF NEW SOUTH WALES	PACIFIC HIGHWAY, MULLUMBIMBY, NSW 2482	Surrendered	06/09/1999	Concrete Works; Freeway or Tollway Construction	Road Match	15m	East
12330	ACCIONA INFRASTRUCTURE PROJECTS AUSTRALIA PTY LTD	Pacific Highway, BRUNSWICK HEADS, NSW 2483	Surrendered	06/06/2005	Road Construction	Road Match	15m	North
572	BYRON SHIRE COUNCIL	BRUNSWICK HEADS SEWAGE TREATMENT WORKS, PACIFIC HIGHWAY, BRUNSWICK HEADS	Surrendered	16/06/2000	Sewage treatment processing by small plants	Premise Match	774m	North East

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

66 the Saddle Road, Brunswick Heads, NSW 2483



Legend

- Site Boundary
- Buffer 150m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 90 180 270 360 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 09 September 2021

Historical Business Directories

66 the Saddle Road, Brunswick Heads, NSW 2483

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
1	Not Listed	Bashforth. J. M & Sons. Earterming.Contrctr., Pacific H'Way. Brunswick Heads. 2483	191276	1991	Road Match	123m
	Not Listed	Brunswick Heads Bowling Club., Pacific H'Way. Brunswick Heads. 2483	191283	1991	Road Match	123m
	Not Listed	Brunswick Mowers & Machinery., Pacific H'Way. Brunswick Heads. 2483	191290	1991	Road Match	123m
	Not Listed	Brunswick Taxi., Pacific H'Way. Brunswick Heads. 2483	191293	1991	Road Match	123m
	Not Listed	Brunswick-Byron Fishermens Co-Op. Ltd., Pacific H'Way. Brunswick Heads. 2483	191296	1991	Road Match	123m
	Not Listed	Buck & Co. Real Estate., Pacific H'Way. Brunswick Heads. 2483	191297	1991	Road Match	123m
	Not Listed	Casa Blanca Motor Inn., Pacific H'Way. Brunswick Heads. 2483	191298	1991	Road Match	123m
	Not Listed	Coolabar Caravan Park., 4 Pacific H'Way. Brunswick Heads. 2483	191304	1991	Road Match	123m
	Not Listed	Era Ray White Real Estate., Pacific H'Way. Brunswick Heads. 2483	191307	1991	Road Match	123m
	Not Listed	Red Prawn. The. Take-Away Food., Pacific H'Way. Brunswick Heads. 2483	191335	1991	Road Match	123m
	Funeral Directors	Tom Kent - Byron Funeral Services., Caltex Service Station. Pacific Highway. Brunswick Heads. 2483	192295	1991	Road Match	123m
	Not Listed	Wightman. Helene Pharmacy., Pacific H'Way. Brunswick Heads. 2483	191346	1991	Road Match	123m
	NOT LISTED	Ferry Reserve Caravan Park, Pacific Highway, North., Brunswick Heads	86716	1982	Road Match	123m

Historical Business Directories

66 the Saddle Road, Brunswick Heads, NSW 2483

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

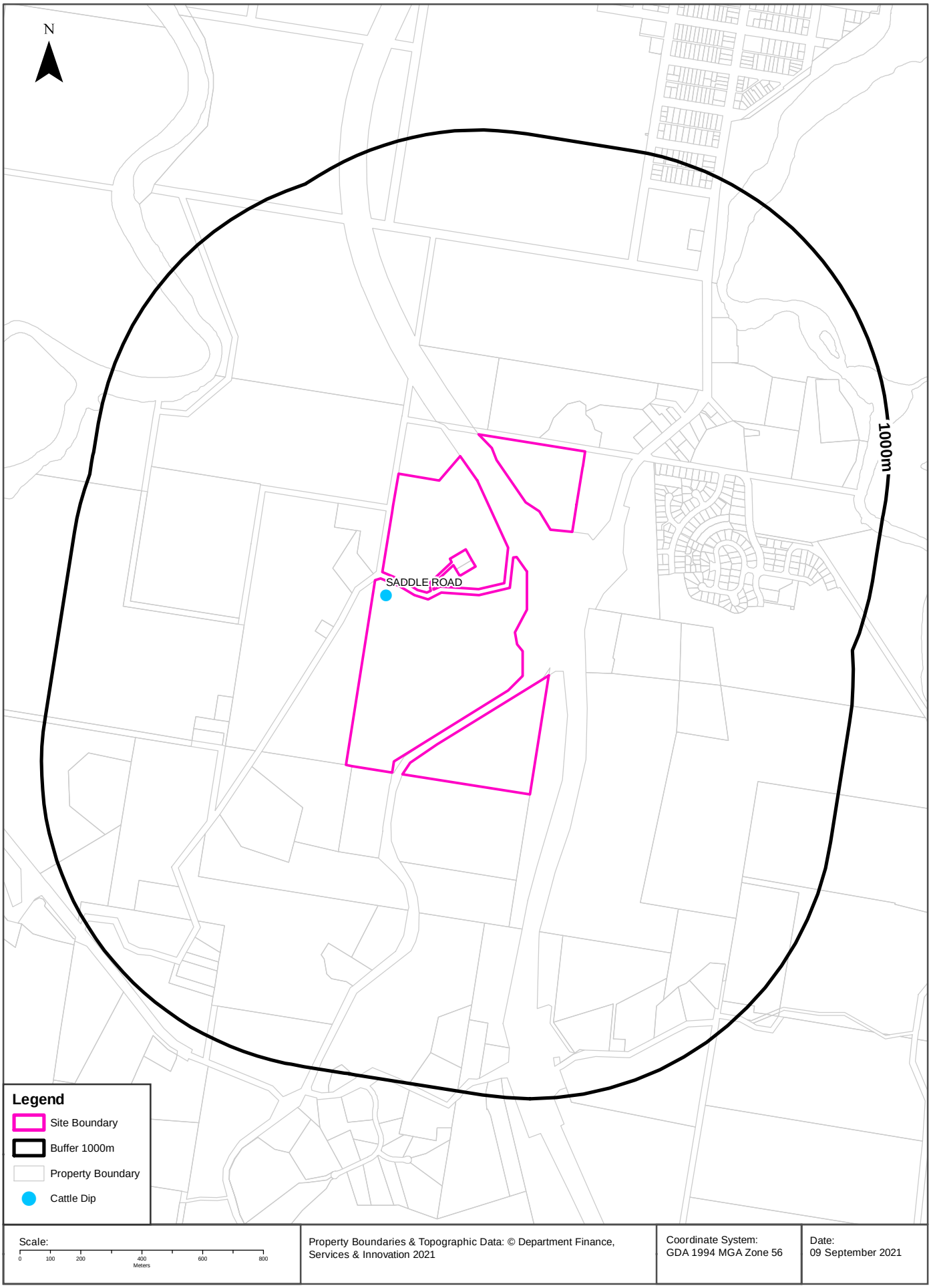
Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

Cattle Dips of the Northern Rivers Region

66 the Saddle Road, Brunswick Heads, NSW 2483



Cattle Dips

66 the Saddle Road, Brunswick Heads, NSW 2483

Cattle Dips of the Northern Rivers Region

Cattle dip sites within the dataset buffer:

Dip Name	Road	Town	Dip Status	Licence / Lease Status	Licence / Lease Expiry Date	Distance	Direction
SADDLE ROAD	SADDLE ROAD	BRUNSWICK HEADS	DECOMMISSION	LAPSED	02/08/2003	0m	On-site

Cattle dip site data provided by the NSW Department of Primary Industries.

Aerial Imagery 2020

66 the Saddle Road, Brunswick Heads, NSW 2483

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 09 September 2021
0 75 150 225 300 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2016

66 the Saddle Road, Brunswick Heads, NSW 2483

Scale: 0 80 160 240 320 Meters	Data Source Aerial Imagery: © 2021 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 08 September 2021

Aerial Imagery 2011

66 the Saddle Road, Brunswick Heads, NSW 2483

Scale:
0 80 160 240 320
Meters

Data Source Aerial Imagery: © 2021 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 08 September 2021

Aerial Imagery 2006

66 the Saddle Road, Brunswick Heads, NSW 2483

Scale:
0 80 160 240 320
Meters

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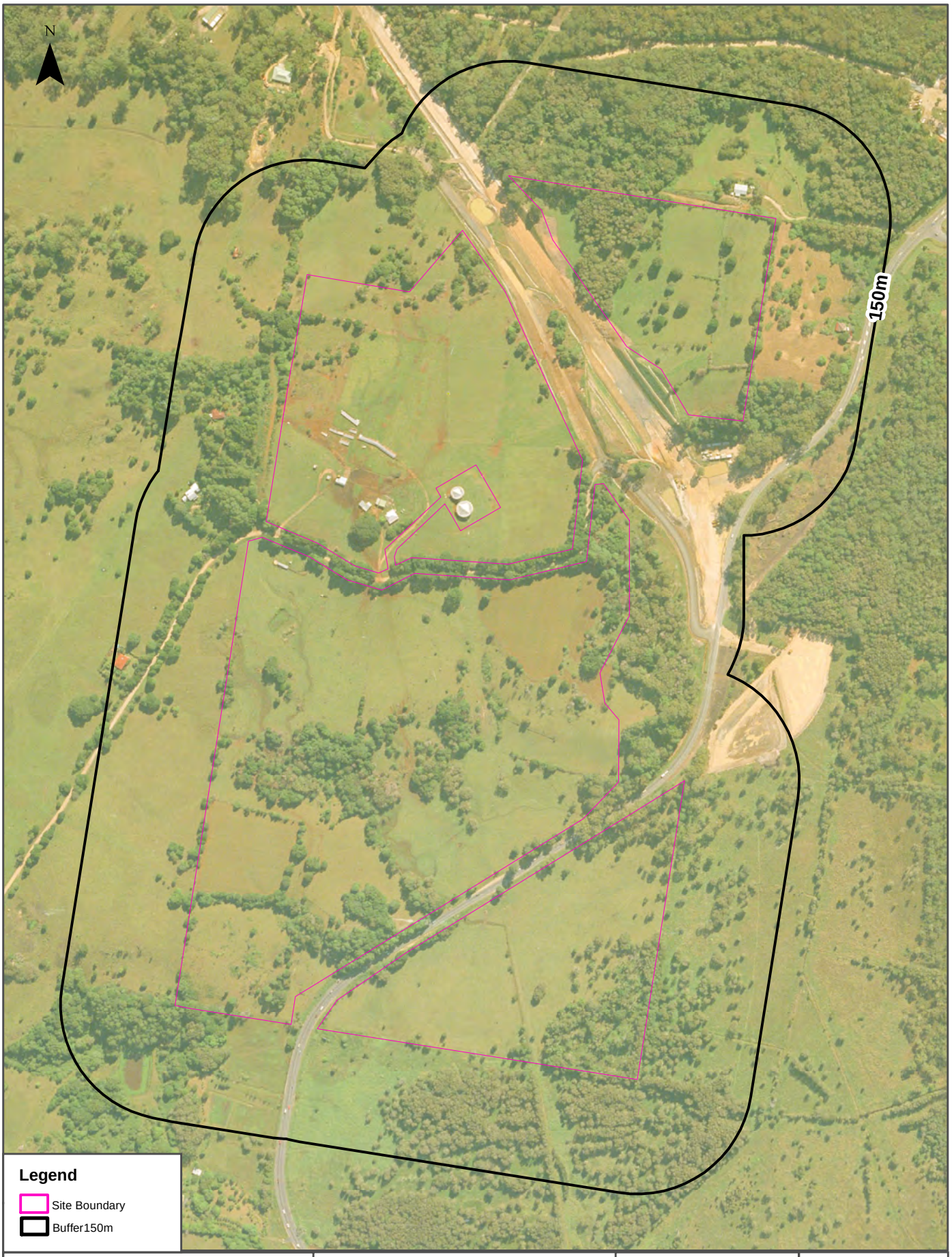
Coordinate System:
GDA 1994 MGA Zone 56

Date: 08 September 2021

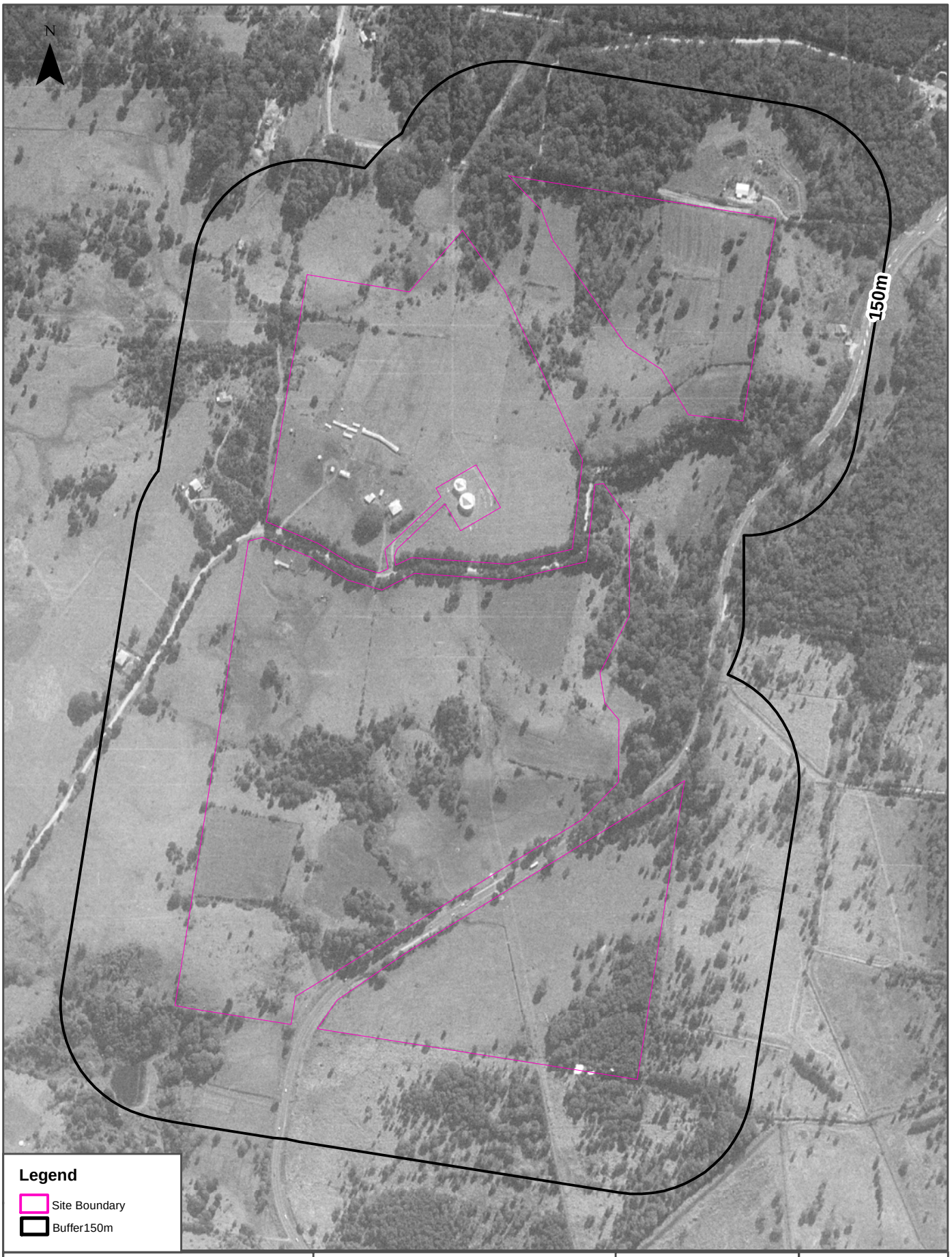
Aerial Imagery 1997

66 the Saddle Road, Brunswick Heads, NSW 2483



Aerial Imagery 1987

66 the Saddle Road, Brunswick Heads, NSW 2483



Aerial Imagery 1979

66 the Saddle Road, Brunswick Heads, NSW 2483

Aerial Imagery 1971

66 the Saddle Road, Brunswick Heads, NSW 2483

Aerial Imagery 1966

66 the Saddle Road, Brunswick Heads, NSW 2483

Aerial Imagery 1958

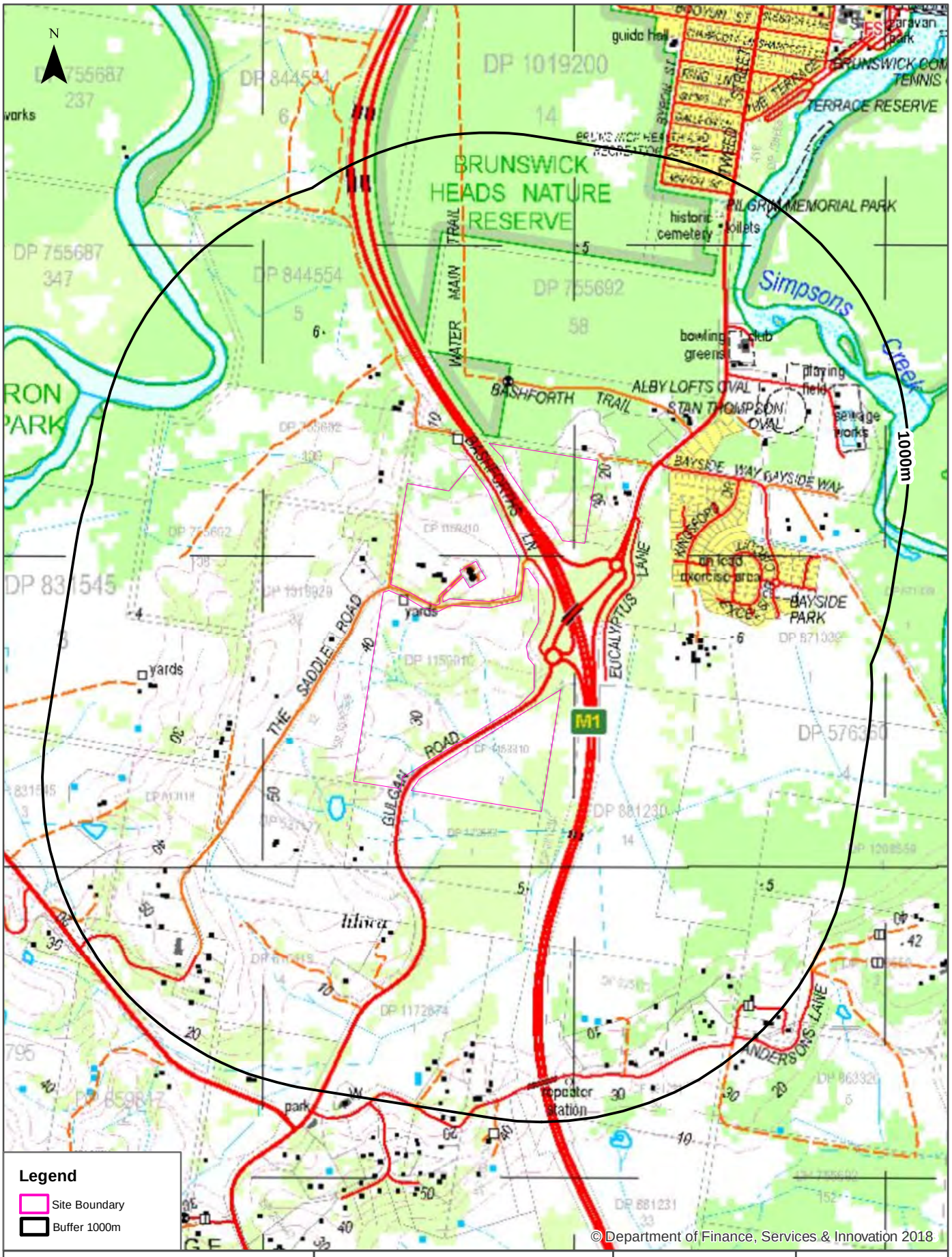
66 the Saddle Road, Brunswick Heads, NSW 2483

Aerial Imagery 1947

66 the Saddle Road, Brunswick Heads, NSW 2483

Topographic Map 2015

66 the Saddle Road, Brunswick Heads, NSW 2483



Legend

- Site Boundary
- Buffer 1000m

Scale: 0 190 380 570 760 Meters

Data Sources: Topographic Map Data © NSW Land and Property Information

Coordinate System: GDA 1994 MGA Zone 56

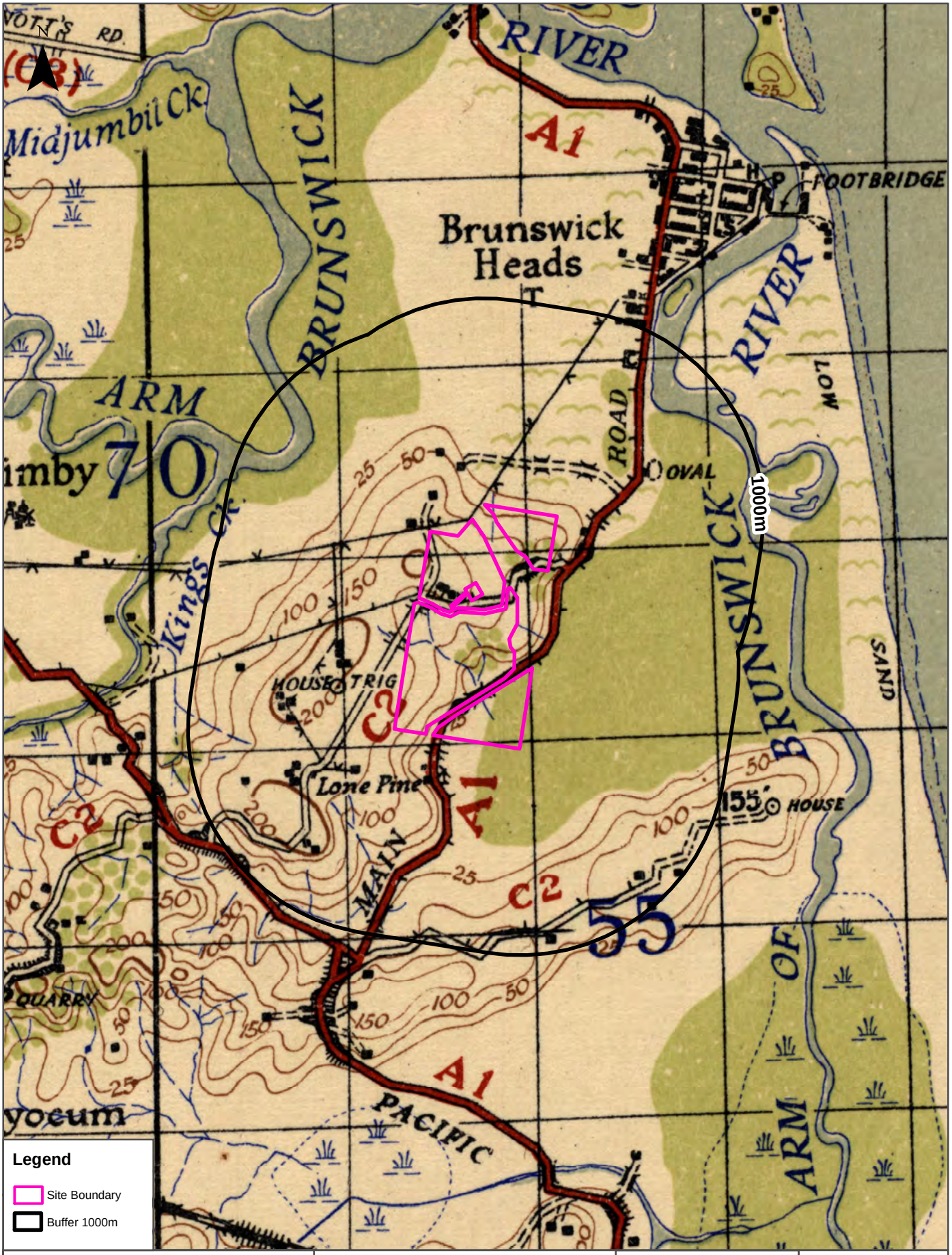
Date: 09 September 2021

Historical Map 1973

66 the Saddle Road, Brunswick Heads, NSW 2483

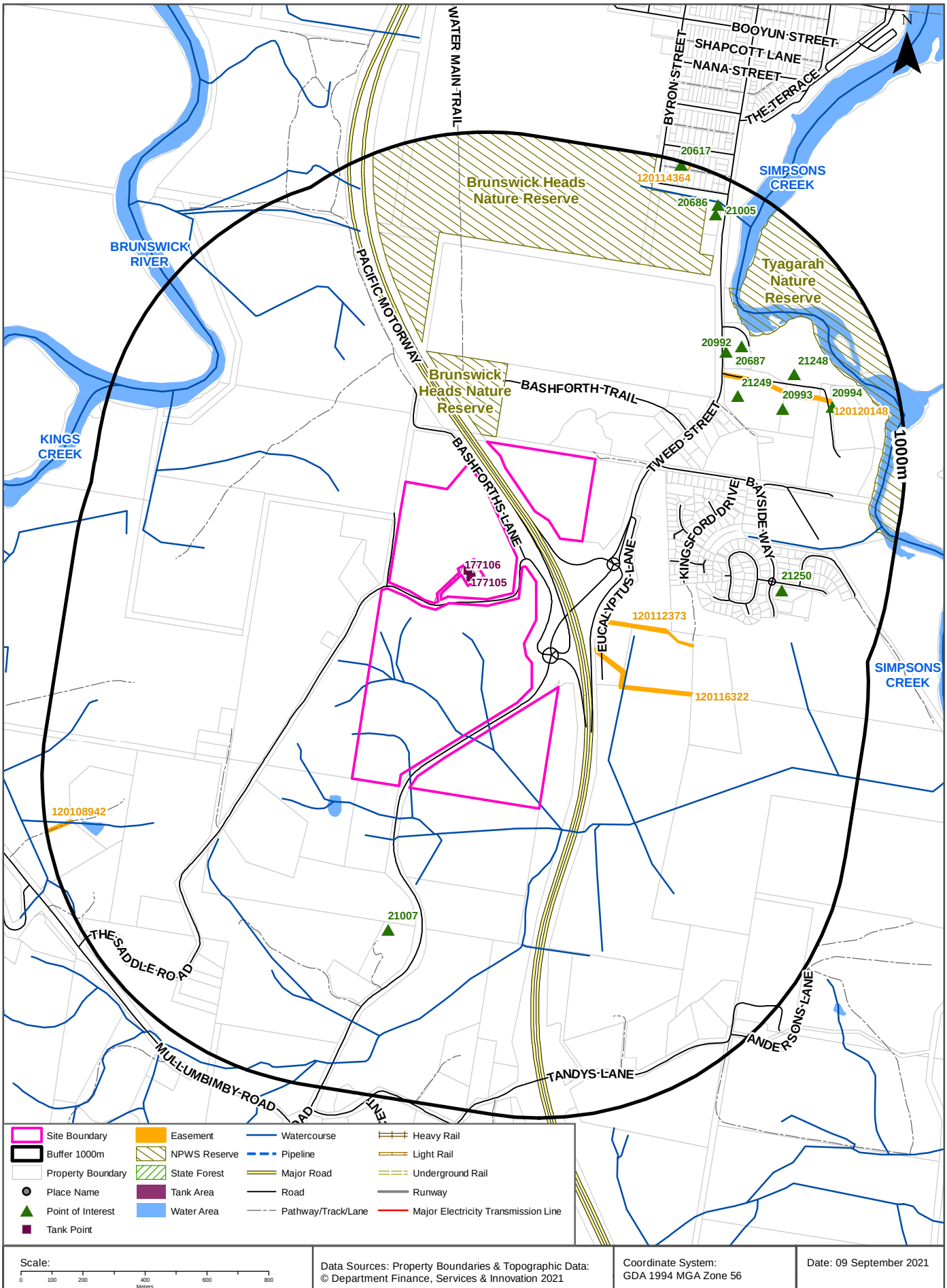
Historical Map c.1942

66 the Saddle Road, Brunswick Heads, NSW 2483



Topographic Features

66 the Saddle Road, Brunswick Heads, NSW 2483



Topographic Features

66 the Saddle Road, Brunswick Heads, NSW 2483

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
21007	Homestead	ITHICA	463m	South
21249	Sports Field	ALBY LOFTS OVAL	504m	North East
20687	Sports Field	BOWLING GREENS	546m	North East
20992	Club	BRUNSWICK HEADS BOWLING CLUB	597m	North East
20993	Sports Field	STAN THOMPSON OVAL	626m	North East
21250	Park	BAYSIDE PARK	663m	East
21248	Sports Field	PLAYING FIELD	699m	North East
20994	Sewage Works	BRUNSWICK HEADS TREATMENT PLANT	783m	North East
21005	Cemetery	HISTORIC CEMETERY	880m	North East
20686	Park	PILGRIM MEMORIAL PARK	911m	North East
20617	Sports Centre	BRUNSWICK HEALTH AND RECREATION CENTRE	991m	North East

Topographic Features

66 the Saddle Road, Brunswick Heads, NSW 2483

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
177106	Undefined	Operational		06/09/2012	20m	North
177105	Undefined	Operational		06/09/2012	21m	North

Major Easements

What Major Easements exist within the dataset buffer?
Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120116322	Primary	Undefined		164m	East
120112373	Primary	Undefined		202m	East
120120148	Primary	Undefined		495m	North East
120108942	Primary	Undefined		910m	South West
120114364	Primary	Undefined		985m	North East

Topographic Features

66 the Saddle Road, Brunswick Heads, NSW 2483

State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

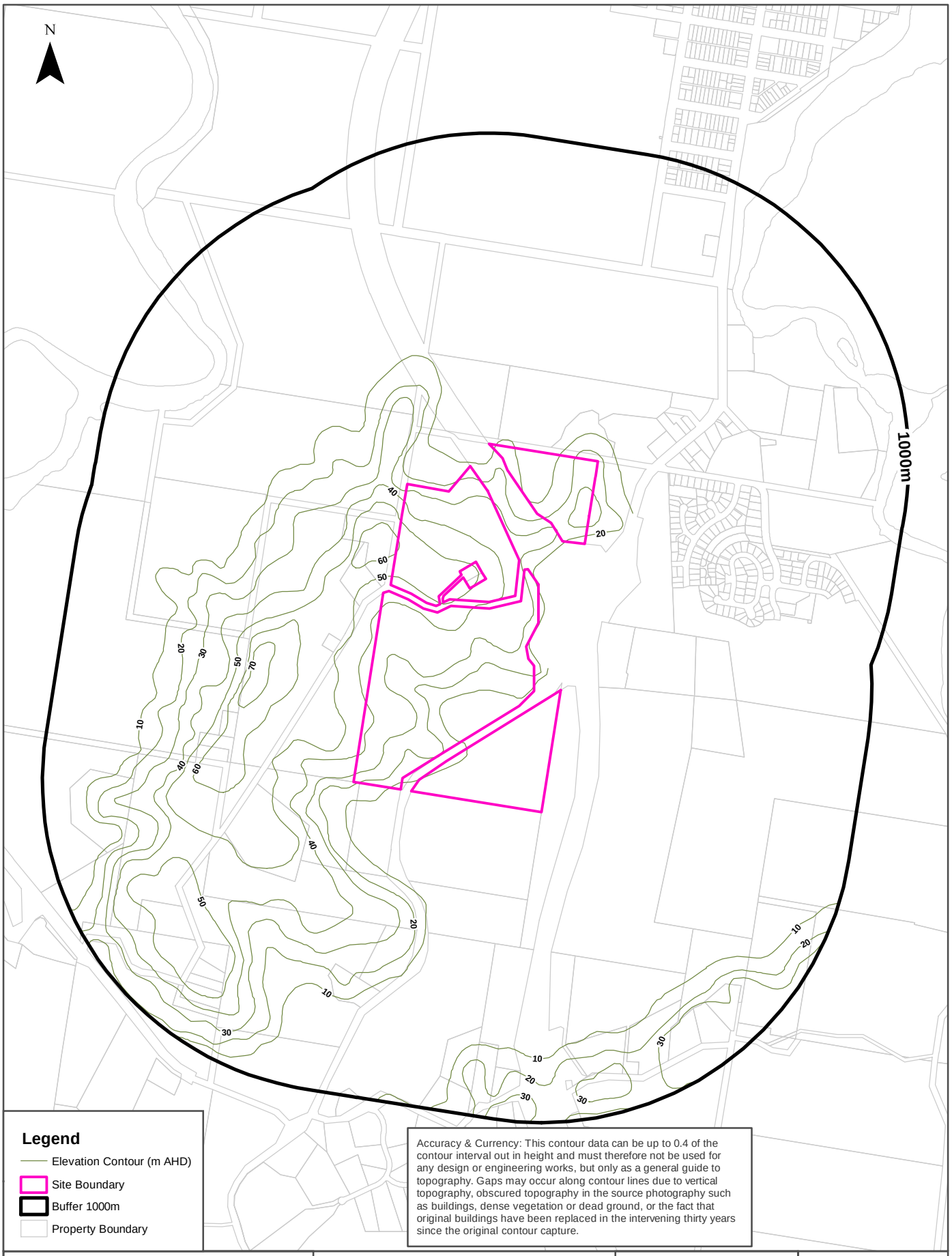
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N0523	NATURE RESERVE	Brunswick Heads Nature Reserve	12/01/1979	20m	North
N0575	NATURE RESERVE	Tyagarah Nature Reserve	26/09/1986	640m	North East

Elevation Contours (m AHD)

66 the Saddle Road, Brunswick Heads, NSW 2483



Hydrogeology & Groundwater

66 the Saddle Road, Brunswick Heads, NSW 2483

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive highly productive aquifers	0m	On-site

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

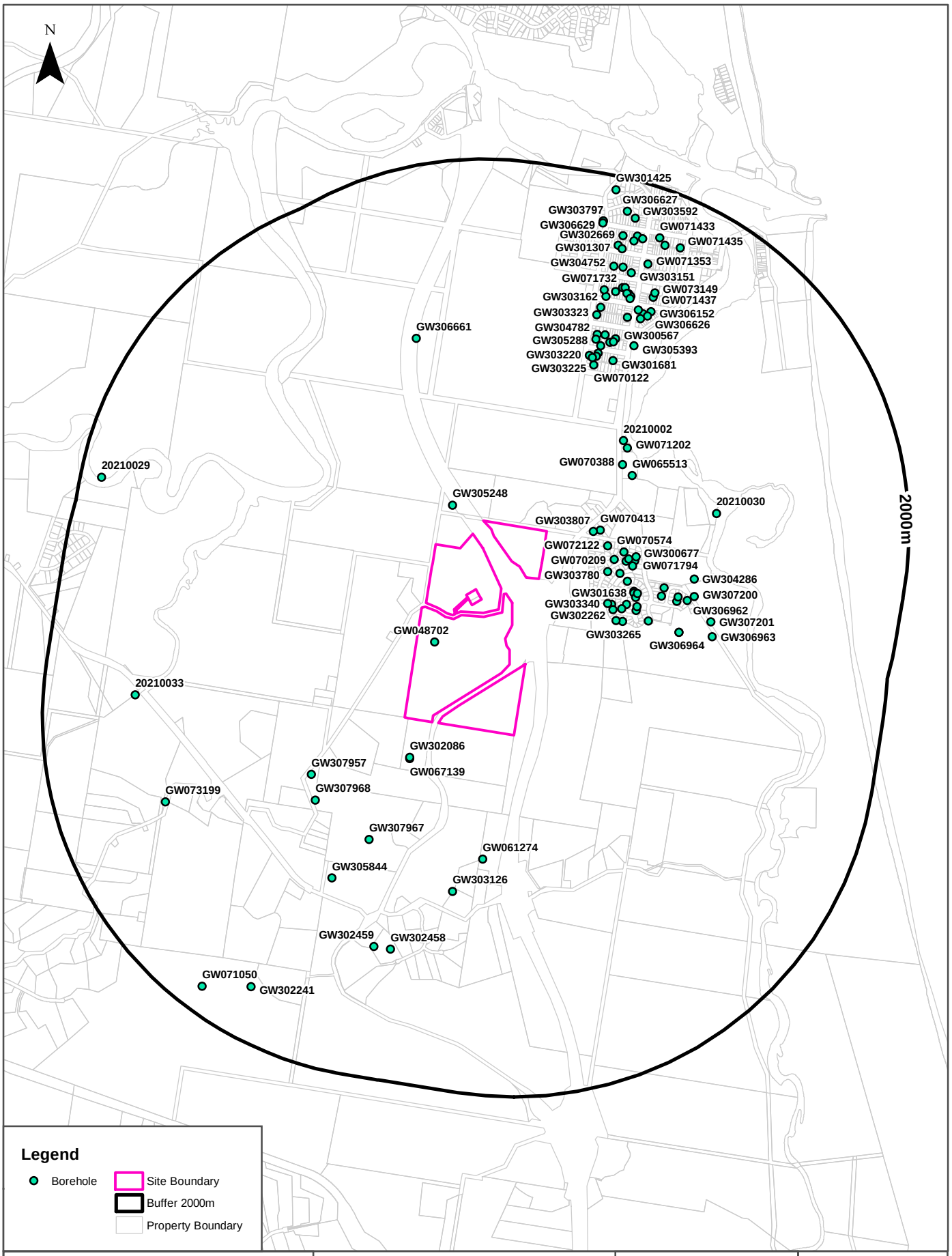
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

Prohibition Area No.	Prohibition	Distance	Direction
N/A	No records in buffer		

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

66 the Saddle Road, Brunswick Heads, NSW 2483



Hydrogeology & Groundwater

66 the Saddle Road, Brunswick Heads, NSW 2483

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW048702	30BL109064	Well	Private	Domestic, Stock	Not Known		01/10/1978	1.50		Good				0m	On-site
GW305248	30BL183622	Bore		Test Bore	Test Bore		26/07/2005	46.00	46.00		1.00	2.100		191m	North
GW302086	30BL178596	Bore	Private	Irrigation	Irrigation							1.000		213m	South West
GW067139	30BL142520	Bore	Private	Domestic, Stock	Domestic, Stock		21/03/1991	30.00	30.00		15.00	0.500	10.00	221m	South West
GW303807	30BL181396	Spear	Private	Domestic	Domestic		12/03/2003	6.40	6.40		4.10	0.500		258m	North East
GW070413	30BL150865	Bore	Private	Domestic	Domestic		09/11/1992	10.50	10.50	Good				295m	North East
GW072122	30BL176509	Bore	Private	Domestic	Domestic		08/12/1994	9.00	9.00		2.50	0.400		347m	North East
GW303780	30BL180599	Spear	Private	Domestic	Domestic		25/11/2002	7.30	7.50		3.50	0.400		369m	North East
GW070209	30BL150869	Bore		Domestic	Domestic		09/11/1992	10.50	10.50	Good	5.00	0.590		394m	North East
GW303340	30BL178088	Bore		Domestic	Domestic			6.30			3.50			405m	East
GW302262	30BL178754	Bore		Domestic	Domestic		03/09/1999	6.50	6.50		2.50	0.400		425m	East
GW303796	30BL181032	Spear	Private	Domestic	Domestic		23/12/2002	6.20	6.20		3.20	0.300		437m	North East
GW070574	30BL152082	Bore		Domestic	Domestic		21/04/1993	7.00	7.00					439m	North East
GW303779	30BL180584	Spear	Private	Domestic	Domestic		18/11/2002	5.80	5.80		1.80	0.400		443m	East
GW304395	30BL182156	Spear	Private	Domestic	Domestic		23/10/2003	6.40	7.30		1.80	0.400		460m	North East
GW304442	30BL182334	Spear	Private	Domestic	Domestic		22/11/2003	6.70	6.70		1.80	0.300		473m	North East
GW302812	30BL178971	Bore		Domestic	Domestic		23/06/2000	7.60	7.60					484m	East
GW303754	30BL180460	Bore	Private	Domestic	Domestic		24/10/2002	5.70	5.70		1.80	0.400		484m	East
GW302795	30BL178915	Bore		Domestic	Domestic		14/04/2000	7.60	7.60					486m	East
GW307603	30BL185444			Domestic	Domestic		23/11/2009	8.20	8.50		2.00			499m	North East
GW301638	30BL178291	Bore		Domestic	Domestic		20/11/1998	7.50	7.50		2.00	0.500		506m	East
GW071794	30BL153966	Spear	Private	Domestic	Domestic		05/03/1994	11.00						506m	North East
GW300677	30BL177625	Bore		Domestic	Domestic		24/02/1997	10.00	10.00			0.630		510m	North East
GW303265	30BL180095	Bore		Domestic	Domestic		30/05/2002	6.70	6.70					518m	East
GW301912	30BL178613	Bore		Domestic	Domestic		04/05/1999	8.50	8.50					528m	East
GW302900	30BL179029	Bore		Domestic	Domestic		25/09/2000	6.70	6.70					531m	East
GW303127	30BL179661	Bore		Domestic	Domestic		13/11/2001	7.00	7.00					545m	East
GW306525	30BL185349	Spear	Private	Domestic	Domestic		14/09/2009	7.30	7.30		2.00	0.400		550m	East

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW070388	30BL151022	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		09/11/1992	10.50	10.50	Good	5.00	0.708		556m	North East
GW065513	30BL142194, 30BL143861	Spear	Private	Recreation (groundwater), Test Bore	Recreation (groundwater)		15/07/1991	5.00	5.00		2.70	1.500		562m	North East
GW303756	30BL180480	Spear	Private	Domestic	Domestic		04/11/2002	7.30	7.30		2.70	0.400		564m	East
GW303177	30BL179497	Bore		Domestic	Domestic		23/10/2001	7.60	7.60					566m	East
GW307957					Domestic, Stock		29/10/2013	26.00			3.78			603m	South West
GW071202	30BL153410			Domestic	Domestic		18/11/1992	11.00	11.00				6.00	640m	North East
GW304359	30BL181414	Spear	Private	Domestic	Domestic		17/01/2004	8.20	8.50		1.50	0.400		648m	East
20210002					UNK								6.43	654m	North East
GW307968					Domestic, Stock		03/10/2017	10.00			1.80			671m	South West
GW305374	30BL180304	Bore		Domestic	Domestic		15/09/2002	8.50	8.00					683m	East
GW303806	30BL181382	Spear	Private	Domestic	Domestic		11/02/2003	7.60	8.20		2.00	0.300		691m	East
GW307967					Domestic		10/01/2018	91.00			0.00			702m	South West
GW061274	30BL133339	Bore	Private	Domestic, Stock	Domestic, Stock		01/08/1985	44.00	44.00					706m	South
GW302224	30BL178565	Bore		Domestic	Domestic		26/11/1999	8.80	8.80		2.00	0.400		772m	East
GW302977	30BL179188	Bore	Private	Domestic	Domestic									774m	East
GW306962	30BL185289	Bore	Private	Monitoring Bore	Monitoring Bore		04/06/2009	3.00	3.00	321	1.30			828m	East
GW306964	30BL185289	Bore	Private	Monitoring Bore	Monitoring Bore		04/06/2009	3.00	3.00	385	0.26			829m	East
GW307202	30BL185289	Bore	Private	Monitoring Bore	Monitoring Bore		04/06/2009	3.00	3.00					829m	East
GW304286	30BL179009	Excavation	Private	Irrigation	Irrigation									846m	East
GW307200	30BL185289	Bore	Private	Monitoring Bore	Monitoring Bore		04/06/2009	3.00	3.00					863m	East
GW303126	30BL179660	Bore		Domestic	Domestic		11/02/2002	48.00	48.00					907m	South
20210030					UNK								2.50	943m	North East
GW070122	30BL150667	Bore	Private	Domestic	Domestic		16/09/1992	20.50	20.50	Good	15.00	0.090		952m	North East
GW305844	30BL181723	Bore	Private	Domestic, Stock	Domestic		16/01/2006	15.00						974m	South West
GW307201	30BL185289	Bore	Private	Monitoring Bore	Monitoring Bore		04/06/2009	3.00	3.00					979m	East
GW303225	30BL180027	Bore		Domestic	Domestic		11/04/2002	6.00	6.00					991m	North East
GW303220	30BL180023	Bore		Domestic	Domestic		11/04/2002	7.00	7.00					998m	North East
GW070407	30BL150854	Bore		Domestic	Domestic		09/11/1992	10.50	10.50	Good	5.00	0.472		1004m	North East
GW306963	30BL185289	Bore	Private	Monitoring Bore	Monitoring Bore		04/06/2009	3.00	3.00	153	1.30			1010m	East
GW301681	30BL178369	Bore		Domestic	Domestic		08/12/1998	7.00	7.00					1010m	North East
GW067142	30BL144021	Bore	Private	Domestic	Domestic			8.00	8.00		3.00	0.900	5.00	1023m	North East
GW303115	30BL179851	Bore		Domestic	Domestic		29/01/2002	8.50	8.50					1064m	North East

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW306661	30BL180370	Bore	Other Govt	Monitoring Bore			01/02/2005	4.00						1074m	North
GW305288	30BL180271	Bore		Domestic	Domestic		26/08/2005	6.00			2.00	0.600		1093m	North East
GW070306	30BL150855	Spear	Private	Domestic	Domestic		09/11/1992	10.50	10.50	Good				1100m	North East
GW303843	30BL180395	Spear	Private	Domestic	Domestic		01/05/2003	9.00	9.00		3.00	0.600		1107m	North East
GW304782	30BL153265	Bore		Domestic			20/10/1993	9.00						1122m	North East
GW300567	30BL176548	Bore		Domestic	Domestic		07/12/1994	9.00	9.00					1128m	North East
GW303776	30BL180561	Spear	Private	Domestic	Domestic		11/11/2002	6.80	6.80		3.60	0.300		1130m	North East
GW305393	30BL178875	Bore		Monitoring Bore	Monitoring Bore		15/09/1999	3.50	3.50					1131m	North East
GW303323	30BL180105	Bore		Domestic	Domestic		20/06/2002	8.90	8.90					1225m	North
GW303790	30BL180750	Spear	Private	Domestic	Domestic		04/12/2002	7.30	7.30		2.00	0.300		1261m	North East
GW303421	30BL180316	Bore		Domestic	Domestic		19/09/2002	6.60	6.60					1271m	North
GW302458	30BL177369	Bore	Private	Domestic	Domestic									1276m	South
GW302459	30BL177369	Bore	Private	Domestic	Domestic									1277m	South
GW304269	30BL182108	Spear	Private	Domestic	Domestic		08/09/2003	9.10	9.10		3.00	0.300		1281m	North East
GW306626	30BL185490	Spear	Private	Domestic	Domestic		18/01/2010	7.60	8.50		2.30	0.300		1309m	North East
GW304263	30BL181350	Spear	Private	Domestic	Domestic		28/08/2003	9.50	9.50		3.20	0.300		1311m	North East
GW305304	30BL183047	Bore		Domestic	Domestic		04/10/2004	8.80	8.80		1.60	0.400		1320m	North East
GW303162	30BL179526	Bore		Domestic	Domestic		20/09/2001	7.30	7.30					1337m	North
GW306152	30BL184472	Bore	Private	Domestic	Domestic		22/01/2007	8.20	8.20		1.50	0.300		1341m	North East
GW305013	30BL183109	Bore		Domestic	Domestic		14/01/2005	7.20	7.20		1.20	0.400		1364m	North East
GW303393	30BL179891	Bore		Domestic	Domestic		08/08/2002	7.00	7.00					1369m	North
GW071888	30BL154343	Spear	Private	Domestic	Domestic		19/03/1994	6.00			3.00	2.000		1376m	North East
GW302989	30BL178916	Bore		Domestic	Domestic		21/03/2002	7.00	7.00					1377m	North East
GW304552	30BL182395	Spear	Private	Domestic	Domestic		31/01/2004	7.20	7.30		3.00	0.500		1384m	North East
GW072059	30BL176539	Spear	Private	Domestic	Domestic		05/12/1994	8.00	8.00		2.50	0.480		1386m	North East
GW073199	30BL151464	Bore	Private	Domestic	Domestic		27/01/1993	53.50	53.50			0.750		1400m	South West
GW071732	30BL153164	Bore		Domestic	Domestic		11/10/1993	8.00	8.00	Fresh		0.400		1408m	North East
GW073224	30BL176302	Spear	Private	Domestic	Domestic		05/12/1994	7.00	7.00		2.50	0.450		1411m	North East
GW071437	30BL153606	Bore		Domestic	Domestic		28/01/1994	9.00				0.500		1419m	North East
GW073149	30BL176103	Spear	Private	Domestic	Domestic		07/10/1994	12.00	12.00					1444m	North East
20210033					UNK								2.93	1492m	West
GW303151	30BL179622	Bore		Domestic	Domestic		12/11/2001	7.00	7.00					1501m	North East
GW304752	30BL181654	Bore		Domestic	Domestic		08/09/2004	7.20	7.20		3.80	0.400		1508m	North
GW071899	30BL154474	Bore	Private	Domestic	Domestic		14/04/1994	9.00	9.00		2.50	0.590		1517m	North

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW071353	30BL153706			Domestic	Domestic, Irrigation		13/12/1993	5.40	5.40				20.00	1576m	North East
GW303800	30BL181127	Spear	Private	Domestic	Domestic		10/01/2003	8.00	8.00		3.40	0.400		1614m	North
GW301307	30BL176960	Bore		Domestic	Domestic		16/09/1995	8.00	8.00	Good				1627m	North
GW303753	30BL180456	Spear	Private	Domestic	Domestic		23/10/2002	5.70	5.70		1.80	0.400		1673m	North
GW302669	30BL179423	Bore		Domestic	Domestic		09/07/2001	7.60	7.60					1685m	North
GW303821	30BL181540	Bore	Private	Domestic	Domestic		01/04/2003	4.90	4.90		1.50	0.400		1699m	North East
GW071760	30BL153588	Spear	Private	Domestic	Domestic		20/04/1994	12.00				0.160		1703m	North East
GW071759	30BL153586	Spear	Private	Domestic	Domestic		20/12/1993	11.00				0.500		1707m	North East
GW302241	30BL178676	Bore		Domestic	Domestic		03/06/1999	54.00	54.00	0.27	0.25	1.800		1712m	South West
GW071435	30BL153595	Spear	Private	Domestic	Domestic		09/12/1993	10.00				0.500		1727m	North East
GW306629	30BL185351	Spear	Private	Domestic	Domestic		19/01/2010	7.30	7.30		2.00	0.500		1730m	North
GW071433	30BL153574	Bore	Private	Domestic	Domestic									1735m	North East
GW303797	30BL181078	Spear	Private	Domestic	Domestic		21/01/2003	7.30	7.30		2.10	0.400		1738m	North
GW306247	30BL184685	Spear	Private	Domestic	Domestic		14/08/2007	7.20	7.20		2.70	0.500		1741m	North
GW303592	30BL180656	Bore		Domestic	Domestic		02/12/2002	5.80	6.00		1.20	0.400		1795m	North
GW306627	30BL185457	Spear	Private	Domestic	Domestic		07/12/2009	8.20	8.40		2.00	0.600		1822m	North
GW071050	30BL152875	Bore	Private	Domestic	Domestic, Stock		07/09/1993	61.00	61.00	Good	25.00	1.000	35.00	1859m	South West
20210029					UNK								4.41	1881m	North West
GW301425	30BL177233	Bore		Domestic	Domestic		14/02/1996	7.00	7.00		3.00	0.570		1923m	North

Hydrogeology & Groundwater

66 the Saddle Road, Brunswick Heads, NSW 2483

Driller's Logs

Drill log data relevant to the boreholes within the dataset buffer:

Groundwater No	Drillers Log	Distance	Direction
GW305248	0.00m-1.00m brown soil 1.00m-9.00m fine wet sand 9.00m-13.00m coarse wet sand (water zone 10 13.00m-16.00m fractured grey rock 16.00m-46.00m very hard grey basalt	191m	North
GW303807	0.00m-0.50m FILL 0.50m-2.90m SAND GREY FINE 2.90m-5.80m COFFEE ROCK BROWN MG HARD 5.80m-6.40m FREE FLOWING SAND LT BROWN MG	258m	North East
GW070413	0.00m-3.00m Sand 3.00m-5.00m Coffee Rock 5.00m-10.50m Sand	295m	North East
GW072122	0.00m-9.00m	347m	North East
GW303780	0.00m-0.90m FILL SAND 0.90m-2.50m SAND WHITE FINE 2.50m-6.40m COFFEE ROCK BROWN MG 6.40m-7.50m FREE FLOWING SAND LIGHT BROWN MG	369m	North East
GW070209	0.00m-3.00m SAND 3.00m-5.00m COFFEE ROCK 5.00m-10.50m SAND	394m	North East
GW302262	0.00m-3.80m sand 3.80m-6.40m coffee rock 6.40m-6.50m free flowing sand	425m	East
GW303796	0.00m-0.40m FILL 0.40m-2.70m SAND GREY FINE 2.70m-5.00m COFFEE ROCK BROWN MG SOFT 5.00m-6.20m FREE FLOWING SAND LT BROWN MG	437m	North East
GW303779	0.00m-2.80m SAND WHITE FINE 2.80m-5.20m COFFEE ROCK BROWN MG HARD 5.20m-5.80m FREE FLOWING SAND LIGHT BROWN MG	443m	East
GW304395	0.00m-2.50m SAND GREY FINE 2.50m-6.00m COFFEE ROCK BROWN MG SOFT 6.00m-7.30m FREE FLOWING SAND LT BROWN MG	460m	North East
GW304442	0.00m-2.50m SAND GREY FINE 2.50m-6.00m COFFEE ROCK BROWN MG SOFT 6.00m-6.70m FREE FLOWING SAND LT BROWN MG	473m	North East
GW303754	0.00m-1.20m SAND WHITE FINE 1.20m-5.00m COFFEE ROCK BROWN MG SOFT 5.00m-5.70m FREE FLOWING SAND LIGHT BROWN MG	484m	East
GW302812	0.00m-2.70m Sand 2.70m-7.00m Coffee Rock (Light Brown) 7.00m-7.60m Free Flowing Sand	484m	East
GW302795	0.00m-2.10m Sand 2.10m-5.50m Coffee Rock (Light Brown) 5.50m-6.50m Coffee Rock (Dark Brown) 6.50m-7.60m Free Flowing Sand	486m	East
GW307603	0.00m-4.30m Sand, grey, fine 4.30m-7.60m Rock, coffee rock, brown, medium grained 7.60m-8.50m Sand; free flowing, light brown, medium grained	499m	North East
GW301638	0.00m-2.60m sand 2.60m-7.00m coffee rock 7.00m-7.50m free flowing sand	506m	East
GW300677	0.00m-10.00m Sand	510m	North East
GW303265	0.00m-2.00m Sand White Fine 2.00m-6.00m Dark Brown Coffee Rock 6.00m-6.70m Free Flowing Sand	518m	East
GW301912	0.00m-4.50m sand 4.50m-7.60m coffee rock 7.60m-8.50m free flowing sand	528m	East

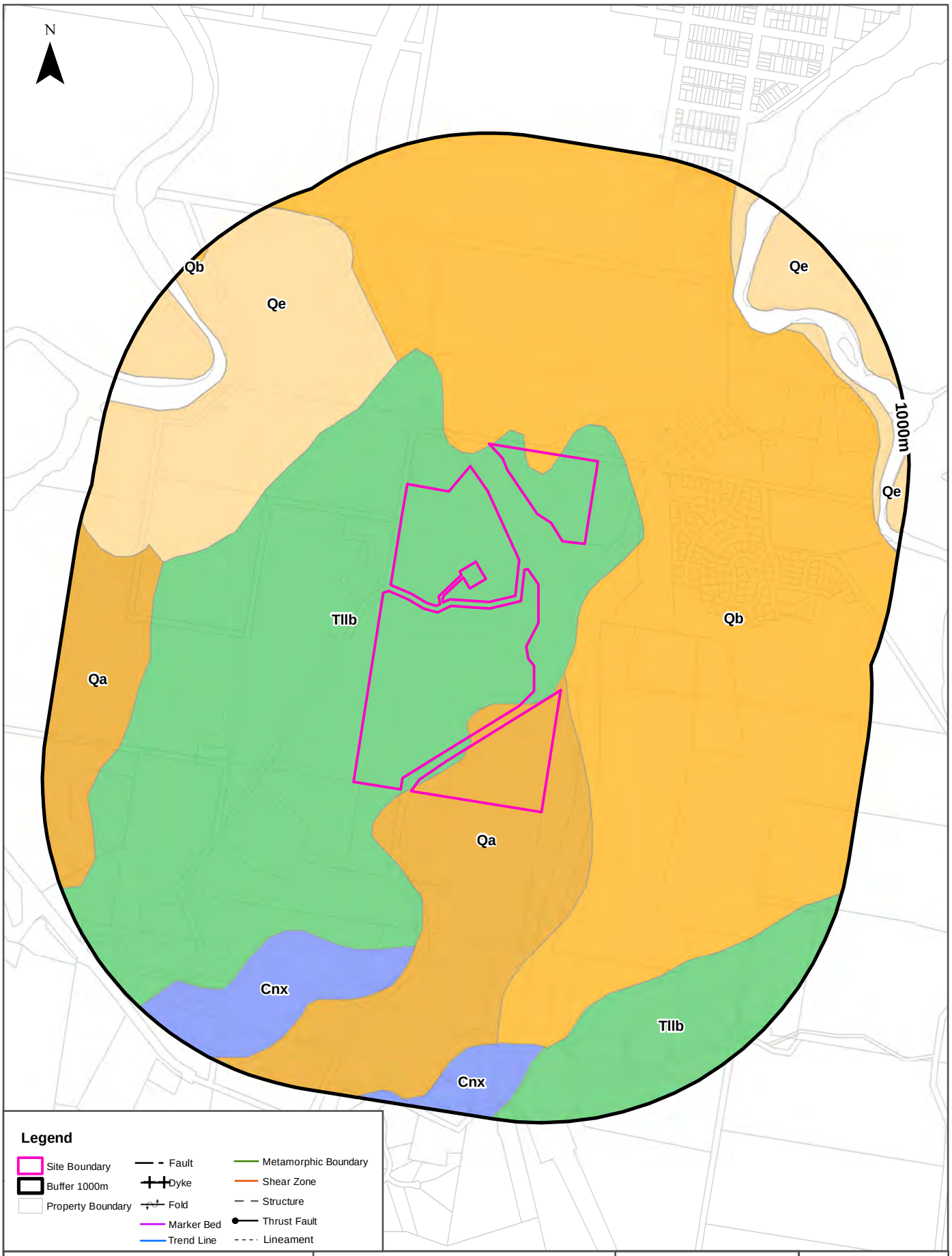
Groundwater No	Drillers Log	Distance	Direction
GW302900	0.00m-3.00m Sand 3.00m-6.70m Coffee Rock (Brown) 6.70m-6.70m Free Flowing Sand	531m	East
GW303127	0.00m-3.20m Sand White Fine 3.20m-4.60m Coffee Rock Brown 4.60m-7.00m Coffee Rock Dark Brown 7.00m-7.00m Free Flowing Sand Light Brown	545m	East
GW306525	0.00m-3.30m Sand, grey, fine 3.30m-6.70m Rock, coffee, brown, medium grained, soft 6.70m-7.30m Sand, free flowing, grey, medium grained	550m	East
GW070388	0.00m-3.00m Sand 3.00m-5.00m Coffee Rock 5.00m-10.50m Sand	556m	North East
GW303756	0.00m-2.70m SAND WHITE FINE 2.70m-6.10m COFFEE ROCK BROWN MG SOFT 6.10m-7.30m FREE FLOWING SAND LIGHT BROWN MG	564m	East
GW303177	0.00m-2.40m Sand White fine 2.40m-7.00m Black Coffee Rock 7.00m-7.60m Free Flowing Sand Light Brown	566m	East
GW304359	0.00m-2.50m SAND GREY FINE 2.50m-7.30m COFFEE ROCK BTOWN MG SOFT 7.30m-8.50m FREE FLOWING SAND LT BROWN MA	648m	East
GW303806	0.00m-0.40m FILL 0.40m-3.30m SAND GREY FINE 3.30m-7.30m COFFEE ROCK DK BROWN MG SOFT 7.30m-8.20m FREE FLOWING SAND LT BROWN MG	691m	East
GW061274	0.00m-3.00m Soil 3.00m-7.00m Clay 7.00m-11.00m Loam Coarse Sandy Water Supply 11.00m-22.00m Shale 22.00m-25.00m Shale Soft Water Supply 25.00m-34.00m Basalt 34.00m-44.00m Basalt Hard Soft Layers Water Supply 44.00m-44.01m Driller	706m	South
GW302224	0.00m-3.60m Sand 3.60m-8.80m Coffee Rock (Soft)	772m	East
GW306962	0.00m-0.20m SAND,FINE,TRACE OF SILT,MOIST,DK GREY 0.20m-3.00m SAND, FINE,MOST BECOMING WET,PALE GREY	828m	East
GW306964	0.00m-0.50m CLAY ORGANIC,FINE SAND,MOIST,DK BROWN 0.50m-1.30m SAND,MOST BECOMING WET,PALE GREY 1.30m-3.00m SAND,FINE,WET BROWN	829m	East
GW303126	0.00m-6.00m Red Soil & Clay 6.00m-7.00m Basalt Gravel 7.00m-12.00m Yellow & White Clay Shale 12.00m-25.00m White Metamorphic Rock 25.00m-26.00m Black Shale 26.00m-48.00m White Metamorphic Rock	907m	South
GW070122	0.00m-15.00m Topsoil 15.00m-20.50m Round Riven Float & Rocks	952m	North East
GW303225	0.00m-2.00m Sand White Fine 2.00m-2.20m Quartz White Hard 2.20m-6.00m Brown Coffee Rock 6.00m-6.00m Free Flowing Sand White	991m	North East
GW303220	0.00m-2.00m Sand White Fine 2.00m-2.20m Quartz White 2.20m-6.00m Brown Coffee Rock 6.00m-7.00m Free Flowing Sand	998m	North East
GW070407	0.00m-3.00m SAND 3.00m-5.00m COFFEE ROCK 5.00m-10.50m SAND	1004m	North East
GW301681	0.00m-3.30m sand 3.30m-6.50m coffee rock 6.50m-7.00m free flowing sand	1010m	North East
GW306963	0.00m-0.50m SAND,FINE,TRACE OF SILT,ORGANIC MATERIAL 0.50m-3.00m SAND,FINE,MOST BECOMING WET,PALE GREY	1010m	East
GW303115	0.00m-2.90m Sand White Fine 2.90m-7.60m Coffee Rock Brown 7.60m-8.50m Free Flowing Sand Light Brown	1064m	North East
GW070306	0.00m-3.00m Sand 3.00m-5.00m Coffee Rock (sand Dark Brown Indurated) 5.00m-10.50m Sand	1100m	North East
GW303843	0.00m-3.00m SAND GREY FINE 3.00m-8.00m COFFEE ROCK DK BROWN MG 8.00m-9.00m FREE FLOWING SAND & GRAVEL BROWN COARSE	1107m	North East

Groundwater No	Drillers Log	Distance	Direction
GW300567	0.00m-9.00m SAND	1128m	North East
GW303776	0.00m-2.50m SAND WHITE FINE 2.50m-6.00m COFFEE ROCK BROWN MG HARD 6.00m-6.80m FREE FLOWING SAND GREY MG	1130m	North East
GW305393	0.00m-3.00m sand 3.00m-3.50m coffee rock	1131m	North East
GW303323	0.00m-0.30m Topsoil 0.30m-2.70m White Fine Sand 2.70m-4.30m Dark Brown Coffee Rock 4.30m-5.80m Dark Brown Coffee Rock 5.80m-7.60m Light Brown Coffee Rock 7.60m-8.90m Free Flowing Sand Light Brown	1225m	North
GW303790	0.00m-3.00m SAND WHITE FINE 3.00m-6.00m COFFEE ROCK BROWN MG 6.00m-7.30m FREE FLOWING SAND LIGHT BROWN MG	1261m	North East
GW303421	0.00m-3.00m White Fine Sand 3.00m-6.00m Brown Coffee Rock 6.00m-6.60m Free Flowing Sand Light Brown	1271m	North
GW304269	0.00m-2.10m SAND GREY FINE 2.10m-7.50m COFFEE ROCK BROWN MG 7.50m-9.10m FREE FLOWING SAND LT BROWN MG	1281m	North East
GW306626	0.00m-4.80m Sand, grey, fine 4.80m-7.00m Rock, coffee, brown, medium grained, soft 7.00m-8.50m Sand, free flowing, grey, medium grained	1309m	North East
GW304263	0.00m-3.00m SAND GREY FINE 3.00m-8.00m COFFEE ROCK BROWN MG 8.00m-9.50m FREE FLOWING SAND LT BROWN MG	1311m	North East
GW305304	0.00m-3.00m sand grey fine 3.00m-8.00m coffee rock brown mg soft 8.00m-8.80m free flowing sand light brown mg	1320m	North East
GW303162	0.00m-4.00m Sand White Fine 4.00m-7.00m Light Brown Coffee Rock 7.00m-7.30m Free Flowing Sand Light Brown	1337m	North
GW306152	0.00m-0.60m Fill 0.60m-3.50m Sand, grey, fine 3.50m-7.50m Rock, coffee, brown, medium, soft 7.50m-8.20m Sand, free flowing, light brown, medium	1341m	North East
GW305013	0.00m-2.00m sand grey fine 2.00m-7.00m coffee rock brown mg soft 7.00m-7.20m free flowing sand lt brown mg	1364m	North East
GW303393	0.00m-3.50m Sand White Fine 3.50m-4.00m Coffee Rock Brown 4.00m-4.60m Quartz White 4.60m-6.50m Coffee Rock Brown 6.50m-7.00m Free Flowing Sand Light Brown	1369m	North
GW302989	0.00m-2.00m Sand White Fine 2.00m-6.50m Coffee Rock Brown Soft 6.50m-7.00m Free Flowing Sand	1377m	North East
GW304552	0.00m-3.00m SAND GREY FINE 3.00m-6.40m COFFEE ROCK BROWN MG 6.40m-7.30m FREE FLOWING SAND LT BROWN MG	1384m	North East
GW072059	0.00m-8.00m	1386m	North East
GW073199	0.00m-1.50m Soil 1.50m-7.90m Clay 7.90m-35.40m Weathered Quartzite 35.40m-53.50m Shale And Quartz	1400m	South West
GW073224	0.00m-7.00m Sand	1411m	North East
GW073149	0.00m-12.00m	1444m	North East
GW303151	0.00m-2.40m Sand White Fine 2.40m-4.90m Light Brown Coffee Rock 4.90m-7.00m Dark Brown Coffee Rock 7.00m-7.00m Free Flowing Sand Light Brown	1501m	North East
GW304752	0.00m-3.00m sand grey fine 3.00m-6.30m coffee rock brown mg hard 6.30m-7.20m free flowing sand lit brown mg	1508m	North
GW071899	0.00m-9.00m	1517m	North

Groundwater No	Drillers Log	Distance	Direction
GW303800	0.00m-3.20m SAND WHITE FINE 3.20m-4.90m COFFEE ROCK BROWN MG SOFT 4.90m-5.10m COFFEE ROCK BROWN MG HARD 5.10m-7.20m COFFEE ROCK BROWN MG SOFT 7.20m-7.50m COFFEE ROCK BROWN MG HARD 7.50m-8.00m FREE FLOWING SAND LT BROWN MG	1614m	North
GW301307	0.00m-6.00m SAND	1627m	North
GW303753	0.00m-0.80m FILL 0.80m-2.70m SAND WHITE FINE 2.70m-5.00m COFFEE ROCK BROWN MG HARD 5.00m-5.70m FREE FLOWING SAND GREY MG	1673m	North
GW302669	0.00m-4.00m White Sand 4.00m-4.60m Coffee Rock/White Quartz 4.60m-5.80m Coffee Rock (light brown) 5.80m-7.60m Coffee Rock/White Quartz 7.60m-7.60m Free Flowing Sand (Tan)	1685m	North
GW303821	0.00m-0.60m FILL 0.60m-2.00m SAND GREY FINE 2.00m-4.30m COFFEE ROCK BROWN MG HARD 4.30m-4.90m FREE FLOWING SAND LT BROWN MG	1699m	North East
GW302241	0.00m-0.50m top soil 0.50m-2.00m clay 2.00m-4.00m shale hard 4.00m-6.00m shale soft 6.00m-20.00m soft weathered greywacke 20.00m-48.00m hard greywacke, very brittle 48.00m-54.00m greywacke	1712m	South West
GW306629	0.00m-2.00m Fill 2.00m-3.00m Sand, grey, fine 3.00m-6.70m Rock, coffee, brown, medium grained 6.70m-7.30m Sand, free flowing, light brown, medium grained	1730m	North
GW303797	0.00m-0.50m FILL 0.50m-3.00m SAND GREY FINE 3.00m-7.00m COFFEE ROCK BROWN MG 7.00m-7.30m FREE FLOWING SAND LT BROWN MG	1738m	North
GW306247	0.00m-2.50m Fill 2.50m-2.80m Sand, grey, fine 2.80m-6.60m Rock, coffee, brown, medium, soft 6.60m-7.20m Sand, free flowing, light brown, medium	1741m	North
GW303592	0.00m-0.80m clay fill 0.80m-2.00m sand white fine 2.00m-5.50m coffey rock black mg 5.50m-6.00m free flowing sand	1795m	North
GW306627	0.00m-3.80m Sand, grey, fine 3.80m-7.50m Rock, coffee, brown, medium grained, soft 7.50m-8.40m Sand, free flowing, light brown, medium grained	1822m	North
GW071050	0.00m-0.50m Topsoil 0.50m-18.00m Shale - soft 18.00m-32.00m Shale - hard 32.00m-40.00m Basalt 40.00m-52.00m Broken rock & quartz 52.00m-61.00m Basalt & Quartz	1859m	South West

Geology

66 the Saddle Road, Brunswick Heads, NSW 2483



Geology

66 the Saddle Road, Brunswick Heads, NSW 2483

Geological Units 1:250,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dist	Dir
Tllb	Basalt	Lismore Basalt	Lamington Volcanics		Cainozoic	0m	On-site
Qa	Undifferentiated alluvial deposits; sand, silt, clay and gravel; some residual and colluvial deposits. Includes some channel, levee, lacustrine, flooplain and swamp deposits. May include some higher level Tertiary terraces				Cainozoic	0m	On-site
Qb	Prograded barrier beach, foredune & shoreface sands, barrier dune sand & terrestrial dunes & dune deflation areas & backbarrier - washover sand sheets & transgressive barrier deposits				Cainozoic	0m	On-site
Qe	Transgressive tidal delta & channel sands & muddy sands, central basin muds, & fluvial bay-head deltas & shoreline deposits of silty sands with rare shells				Cainozoic	291m	North West
Cnx	Feldspathic & lithic meta-arenite, metaSiltstone, chert, jasper, basic meta- volcanics, conglomerate. They are a thick sequence of proximal to distal turbidites with structurally intercalated or stratigraphically underlying chert, jasper & metabasalt	Neranleigh-Fernvale beds				489m	South

Geological Structures 1:250,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Distance	Direction
N/A	No records in buffer				

Naturally Occurring Asbestos Potential

66 the Saddle Road, Brunswick Heads, NSW 2483

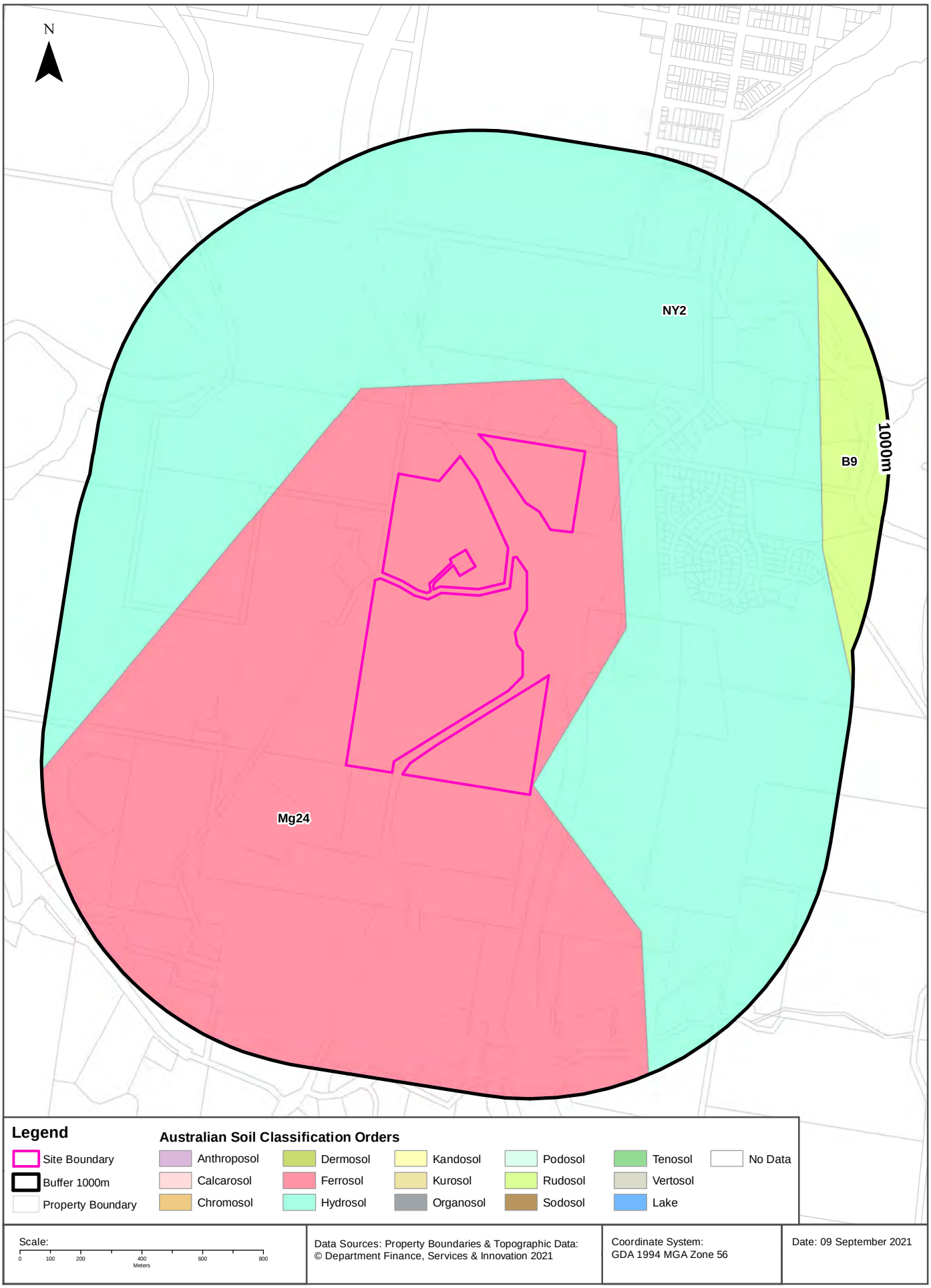
Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Atlas of Australian Soils

66 the Saddle Road, Brunswick Heads, NSW 2483



Soils

66 the Saddle Road, Brunswick Heads, NSW 2483

Atlas of Australian Soils

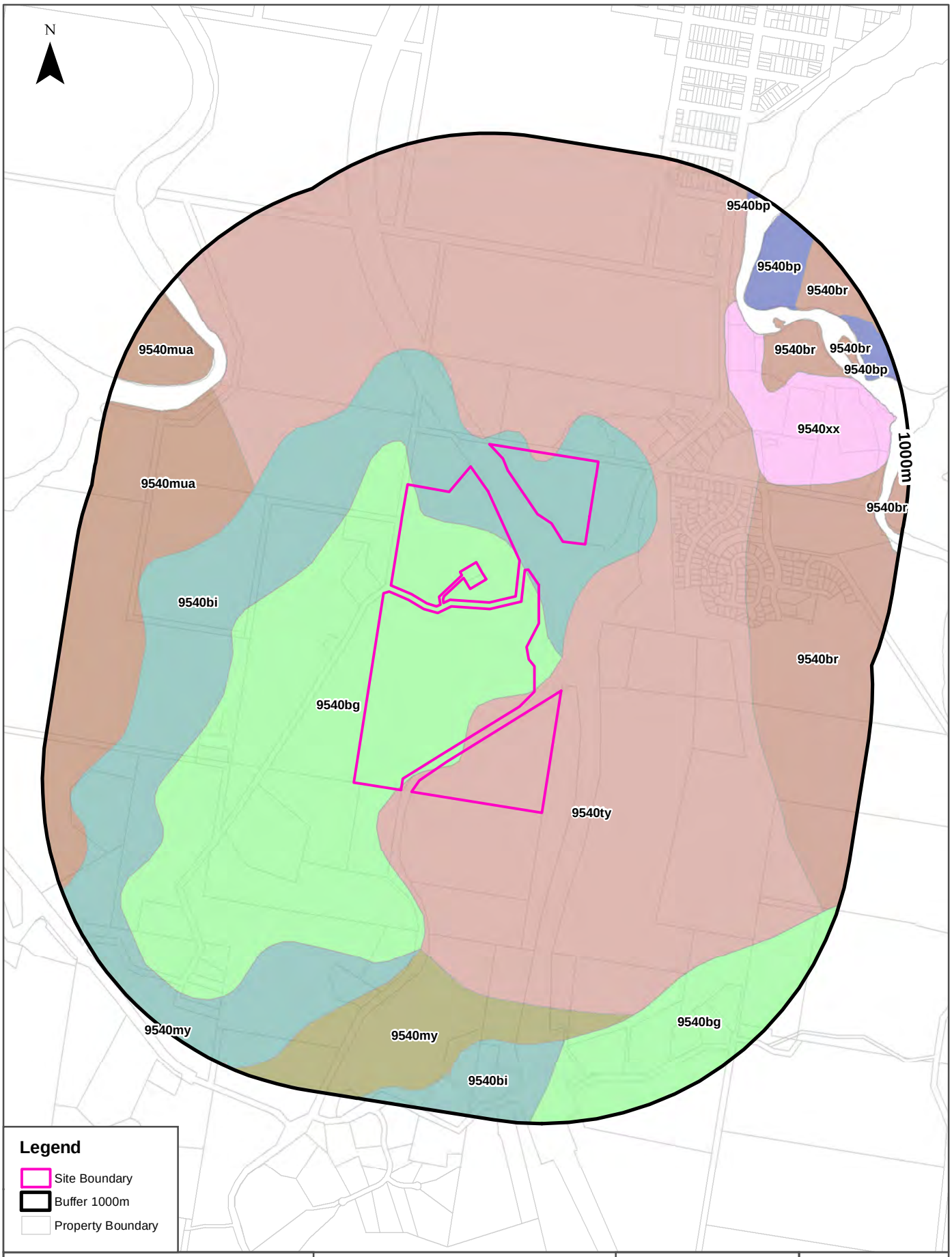
Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Mg24	Ferrosol	Plateaux and plateau remnants at low elevation (< 1000 ft): low rolling hills of red friable porous earths (Gn4.11) generally on moderate to gentle but occasionally steep slopes, and in association with small areas of many different soils, including (Gn4.31). Small areas of units Mf5 and M12 are included around plateau edges. In some of the small headland occurrences of the unit, (Gn3.1) soils are present to an unknown extent.	0m	On-site
NY2	Hydrosol	River flood-plains and coastal plains similar to unit NY1 but with a higher proportion of better-drained land: chief soils of the flats and gently sloping areas are friable acidic gley soils (Dg4.11, Dg4.41, and Dg4.81) and/or friable acidic yellow mottled soils (Dy5.11) and/or cracking clays (Ug5.16) and (Ug5.4) with other soils such as (Dd3.11) and (Uf6.41). Associated are narrow river valleys extending back into the hills and having slopes of (Dy5.61 and Dy5.81) and/or (Dy3.21 and Dy3.41) soils, small flood-plains of (Dg4) and (Dy5) soils, and terraces of (Um6.11) and other undescribed soils; and swamps and flats of leached sand soils (Uc2.2 and/or Uc2.3) towards the coast. Small areas of units Mg24 and Mf5 are included also. Soil pattern is complex and not well known.	3m	North East
B9	Rudosol	Present beach system of dunes and estuaries: dunes of siliceous sands (Uc1.21) backed by slopes of siliceous sands (Uc1.21) and/or leached sand soils (Uc2.2 and Uc2.3); other soils include (Dy5.81) and acid peats (0). As mapped, small areas of units NY1 and NY2 are included.	772m	North East

Atlas of Australian Soils Data Source: CSIRO

Soil Landscapes of Central and Eastern NSW

66 the Saddle Road, Brunswick Heads, NSW 2483



Soils

66 the Saddle Road, Brunswick Heads, NSW 2483

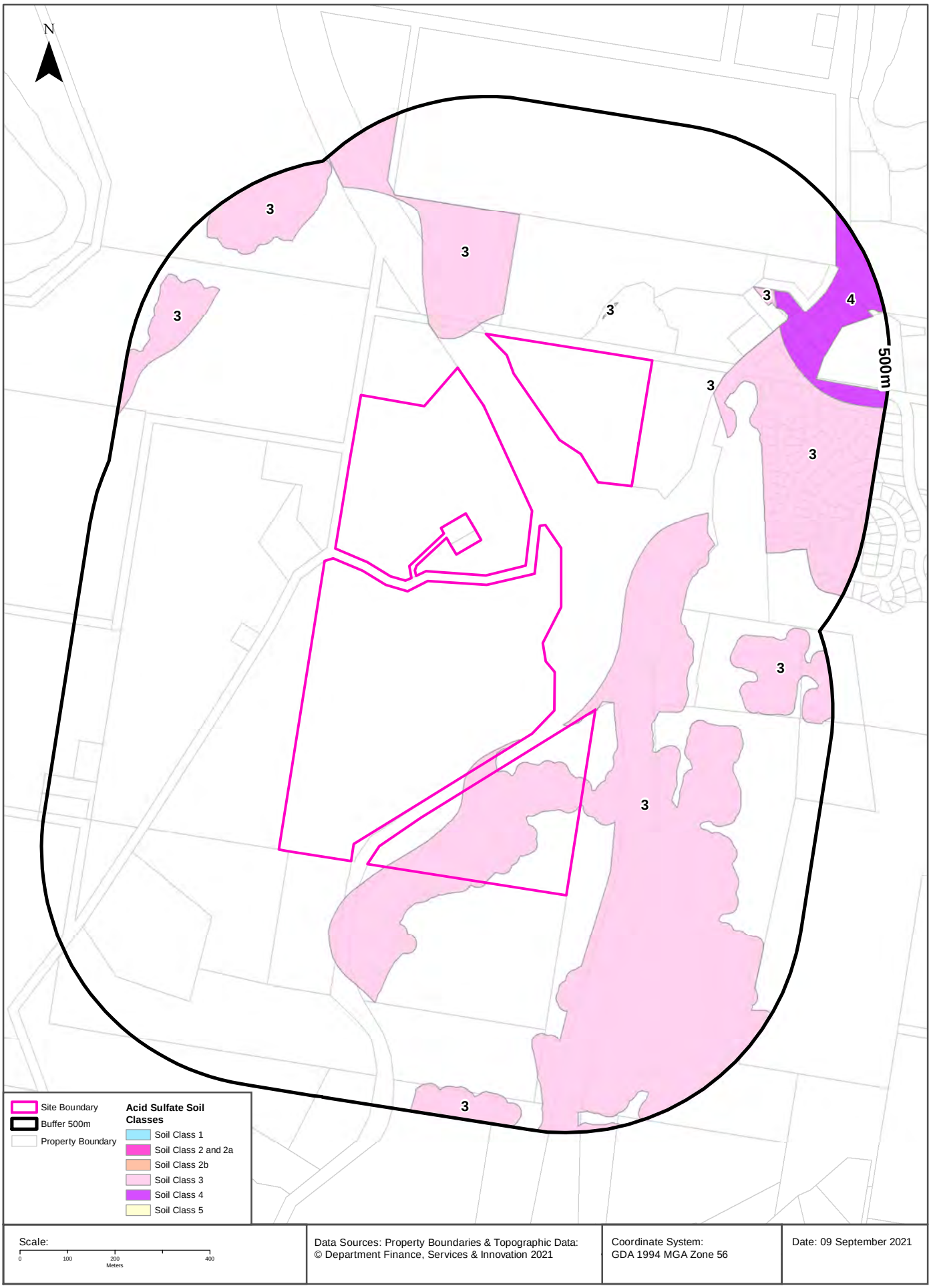
Soil Landscapes of Central and Eastern NSW

Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
9540bg	Bangalow	0m	On-site
9540ty	Tyagarah	0m	On-site
9540bi	Billinudgel	0m	On-site
9540xx	Disturbed Terrain	478m	North East
9540mua	Mullumbimby variant a	484m	West
9540my	Myocum	494m	South
9540br	Black Rock	512m	East
9540bp	Burns Point	695m	North East

Acid Sulfate Soils

66 the Saddle Road, Brunswick Heads, NSW 2483



Acid Sulfate Soils

66 the Saddle Road, Brunswick Heads, NSW 2483

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

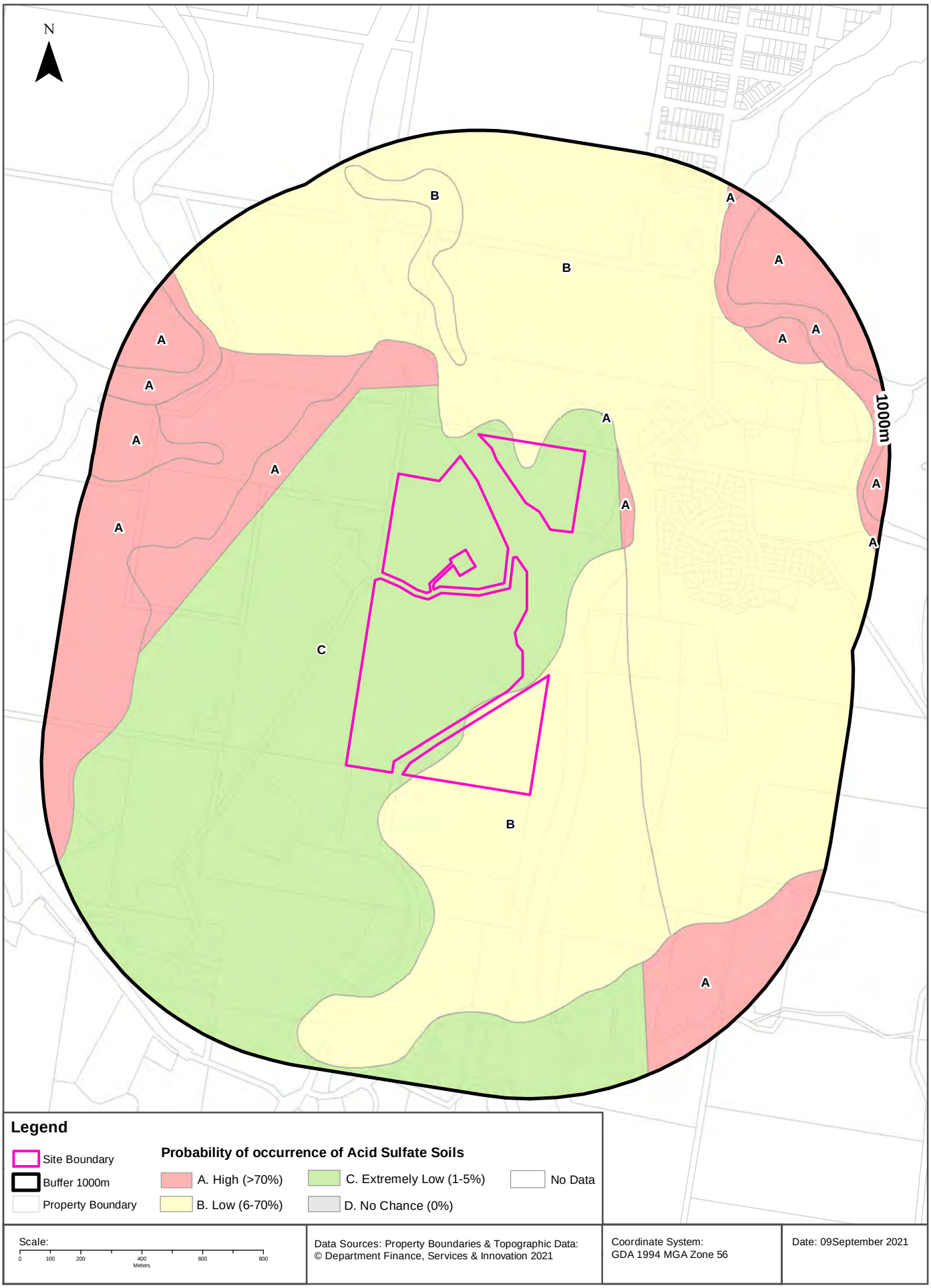
Soil Class	Description	EPI Name
3	Works more than 1 metre below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered more than 1 metre below natural ground surface, present an environmental risk	Byron Local Environmental Plan 2014

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

66 the Saddle Road, Brunswick Heads, NSW 2483



Acid Sulfate Soils

66 the Saddle Road, Brunswick Heads, NSW 2483

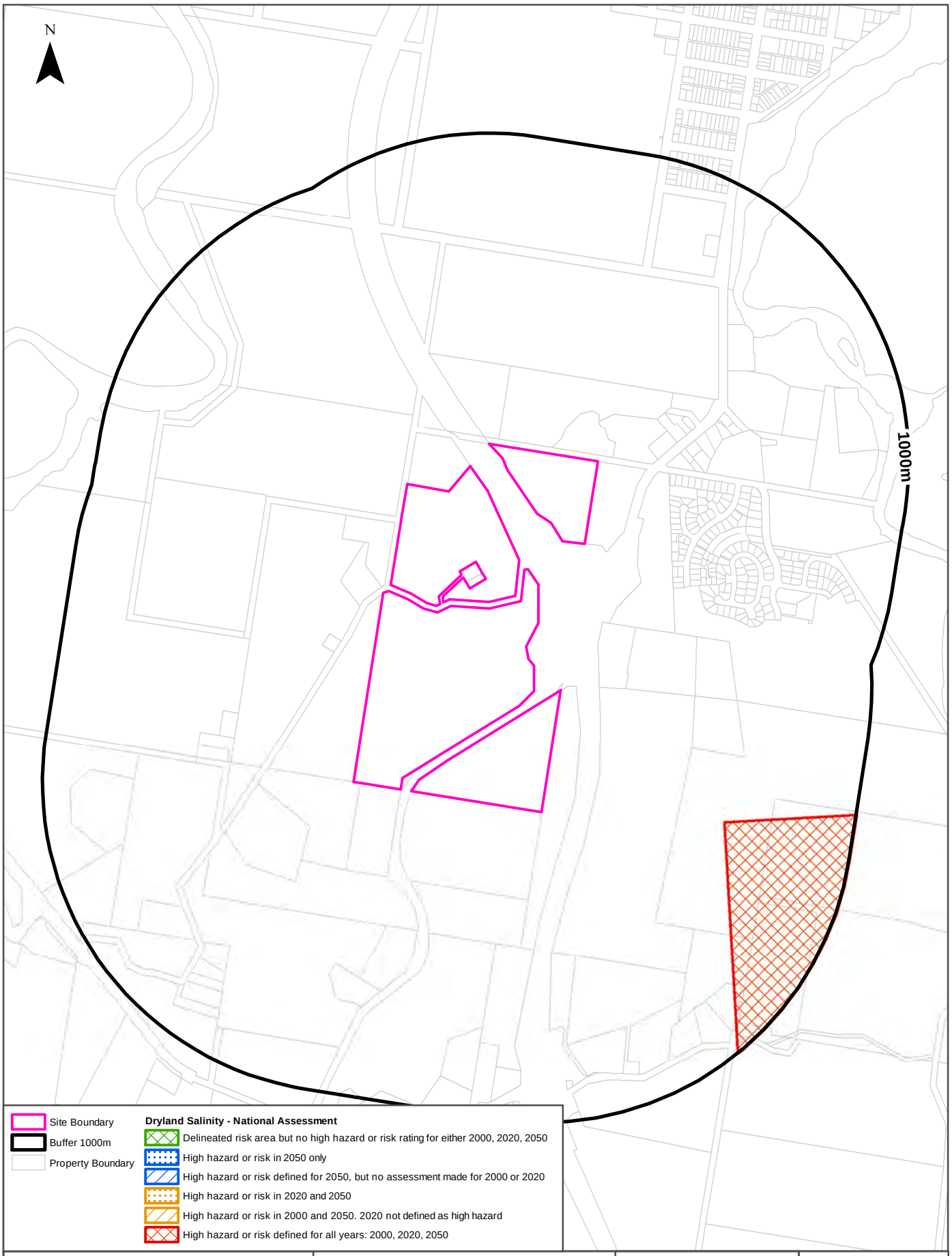
Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	103m	North East

Dryland Salinity

66 the Saddle Road, Brunswick Heads, NSW 2483



Dryland Salinity

66 the Saddle Road, Brunswick Heads, NSW 2483

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

Is there Dryland Salinity - National Assessment data within the dataset buffer?

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	584m	South East

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining

66 the Saddle Road, Brunswick Heads, NSW 2483

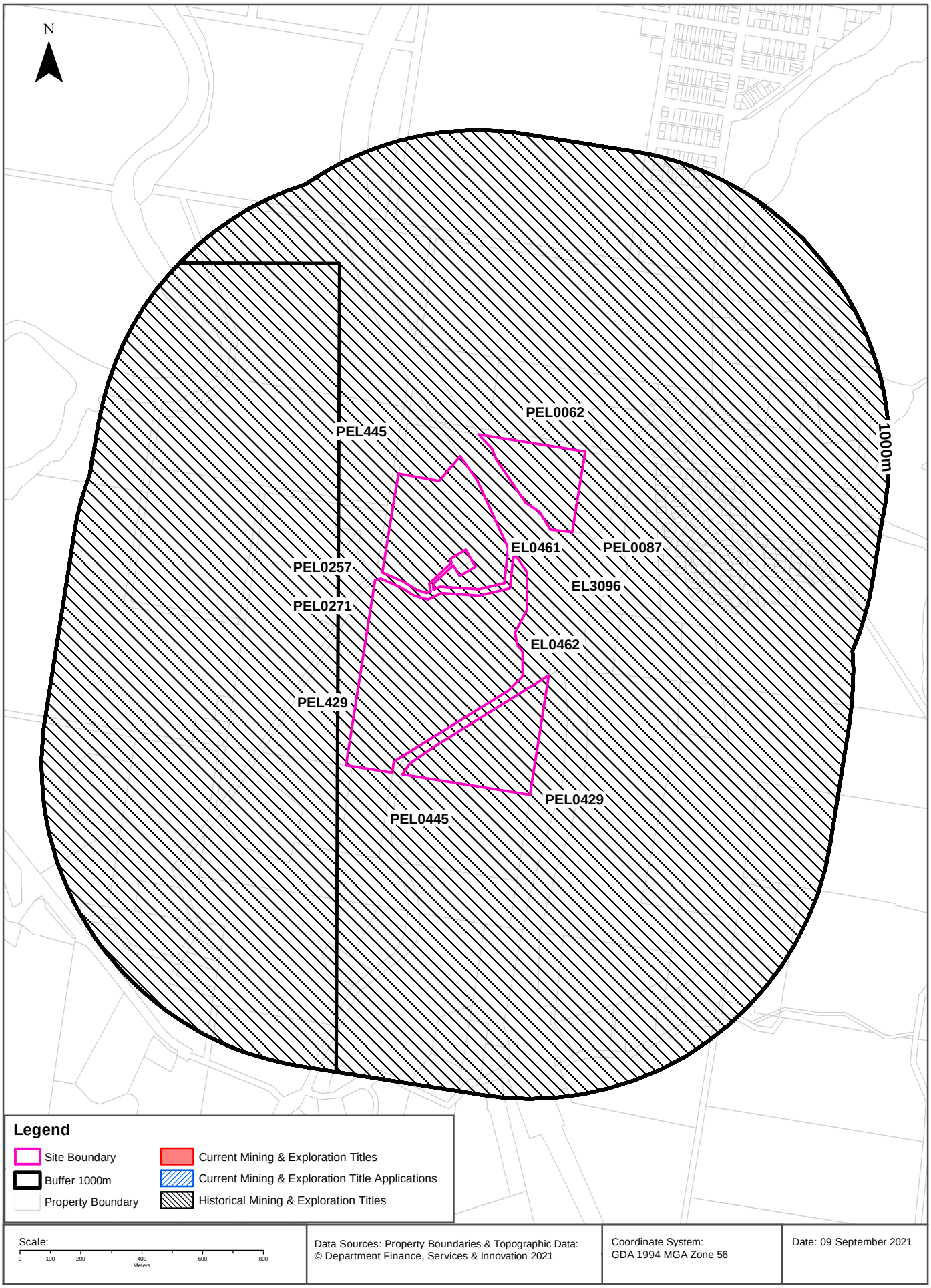
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining & Exploration Titles

66 the Saddle Road, Brunswick Heads, NSW 2483



Mining

66 the Saddle Road, Brunswick Heads, NSW 2483

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer								

Current Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

66 the Saddle Road, Brunswick Heads, NSW 2483

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL0062	MID-EASTERN OIL			PETROLEUM	Petroleum	0m	On-site
PEL0087	NATIONAL OIL HOLDINGS LTD, ALLIANCE OIL DEVELOPMENT AUSTRALIA NL			PETROLEUM	Petroleum	0m	On-site
PEL0257	OIL AND MINERALS QUEST NL	3/12/1980		PETROLEUM	Petroleum	0m	On-site
PEL0271	BASE RESOURCES LTD, EDGEWORTH MINERALS LTD	10/05/1984	9/05/1986	PETROLEUM	Petroleum	0m	On-site
PEL0445	DART ENERGY (BRUXNER) PTY LTD	19/04/2004	19/10/2015	PETROLEUM	Petroleum	0m	On-site
PEL445	DART ENERGY (BRUXNER) PTY LTD			MINERALS		0m	On-site
PEL0429	SUNOCO INC	26/10/1999	13/11/2002	PETROLEUM	Petroleum	0m	On-site
EL0462	PLANET METALS LIMITED	01 Jun 1971	01 Dec 1972	MINERALS	Ti Fe Th Heavy mineral sands Zircon	0m	On-site
EL0461	PLANET METALS LIMITED	01 Jun 1971	01 Dec 1972	MINERALS	Ti Fe Th Heavy mineral sands Zircon	0m	On-site
EL3096	AUSTRALMIN PACIFIC NL	01 Jun 1988	01 Feb 1992	MINERALS	Heavy mineral sands	0m	On-site
PEL429	SUNOCO INC.			MINERALS		0m	On-site

State Environmental Planning Policy

66 the Saddle Road, Brunswick Heads, NSW 2483

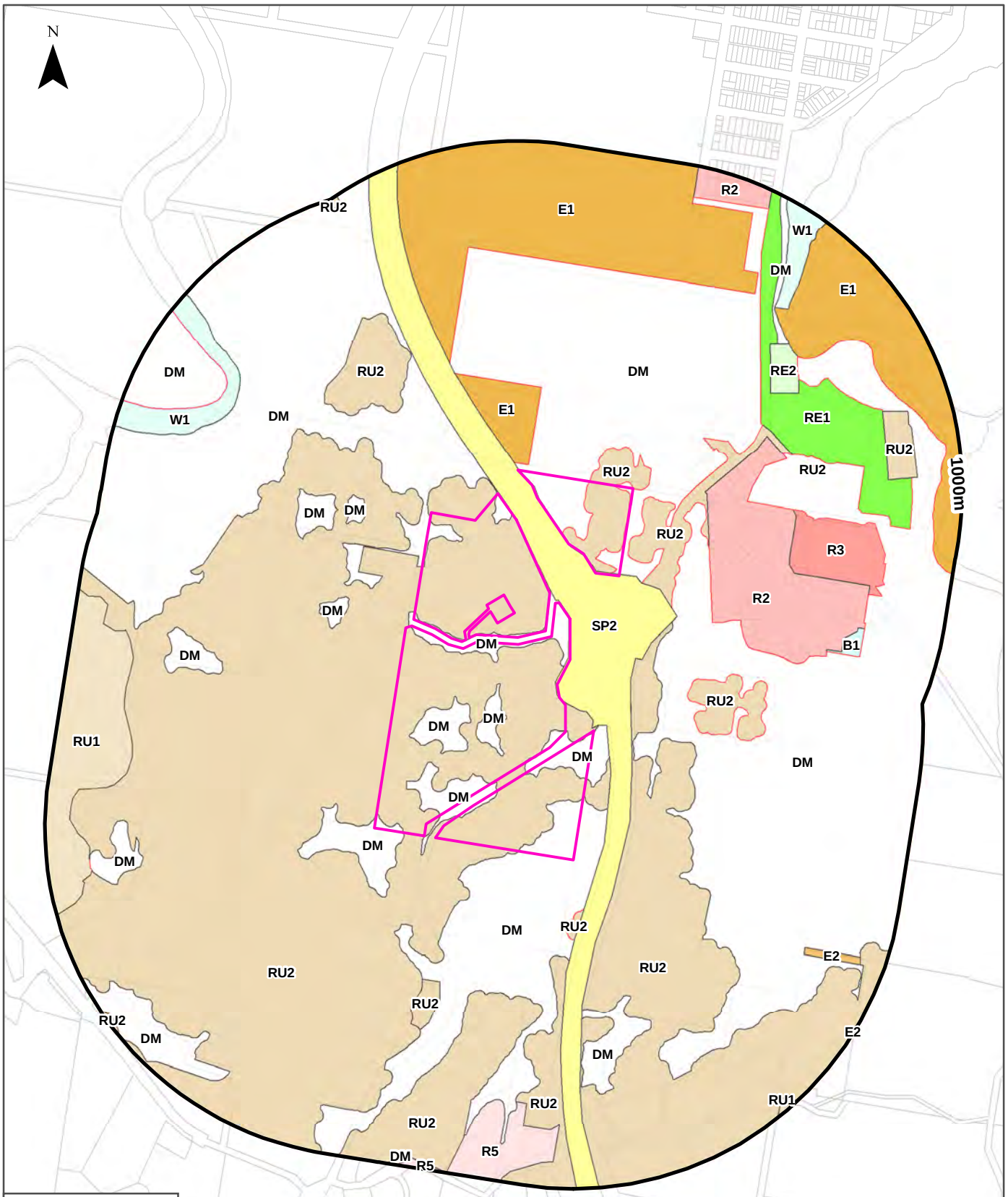
State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No records in buffer							

EPI Planning Zones

66 the Saddle Road, Brunswick Heads, NSW 2483



Environmental Planning Instrument

66 the Saddle Road, Brunswick Heads, NSW 2483

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
DM	Deferred Matter		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		0m	On-site
RU2	Rural Landscape		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		0m	On-site
RU2	Rural Landscape		Byron Local Environmental Plan 2014	12/02/2021	12/02/2021	14/05/2021	Amendment No 23	0m	On-site
SP2	Infrastructure	Classified Road	Byron Local Environmental Plan 2014	17/03/2017	17/03/2017	14/05/2021	Amendment No 12	0m	On-site
RU2	Rural Landscape		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		13m	North East
E1	National Parks and Nature Reserves		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		20m	North
RU2	Rural Landscape		Byron Local Environmental Plan 2014	12/02/2021	12/02/2021	14/05/2021	Amendment No 23	112m	South East
DM	Deferred Matter		Byron Local Environmental Plan 2014	12/02/2021	12/02/2021	14/05/2021	Amendment No 23	121m	East
RU2	Rural Landscape		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		152m	South
DM	Deferred Matter		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		186m	North West
DM	Deferred Matter		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		198m	North West
R2	Low Density Residential		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		216m	East
DM	Deferred Matter		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		281m	North West
RU2	Rural Landscape		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		301m	East
RU2	Rural Landscape		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		324m	North
E1	National Parks and Nature Reserves		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		384m	North
RU2	Rural Landscape		Byron Local Environmental Plan 2014	12/02/2021	12/02/2021	14/05/2021	Amendment No 23	429m	South
RE1	Public Recreation		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		434m	North East
DM	Deferred Matter		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		441m	South
R3	Medium Density Residential		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		488m	East
RE2	Private Recreation		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		506m	North East
RU2	Rural Landscape		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		525m	North East
DM	Deferred Matter		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		529m	West
DM	Deferred Matter		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		619m	North East
E1	National Parks and Nature Reserves		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		639m	North East
B1	Neighbourhood Centre		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		667m	East
W1	Natural Waterways		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		682m	North West
DM	Deferred Matter		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		709m	South West

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
DM	Deferred Matter		Byron Local Environmental Plan 2014	12/02/2021	12/02/2021	14/05/2021	Amendment No 23	729m	North West
E2	Environmental Conservation		Byron Local Environmental Plan 2014	12/02/2021	12/02/2021	14/05/2021	Amendment No 23	750m	South East
R5	Large Lot Residential		Byron Local Environmental Plan 2014	12/02/2021	12/02/2021	14/05/2021	Amendment No 23	753m	South
RU1	Primary Production		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		760m	West
RU2	Rural Landscape		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		772m	North East
DM	Deferred Matter		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		802m	South West
R2	Low Density Residential		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		904m	North East
RU1	Primary Production		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		958m	South East
DM	Deferred Matter		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		966m	South
RU2	Rural Landscape		Byron Local Environmental Plan 2014	30/05/2014	21/07/2014	14/05/2021		970m	North
E2	Environmental Conservation		Byron Local Environmental Plan 2014	12/02/2021	12/02/2021	14/05/2021	Amendment No 23	992m	South East

Heritage

66 the Saddle Road, Brunswick Heads, NSW 2483

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage

Environmental Planning Instrument - Heritage

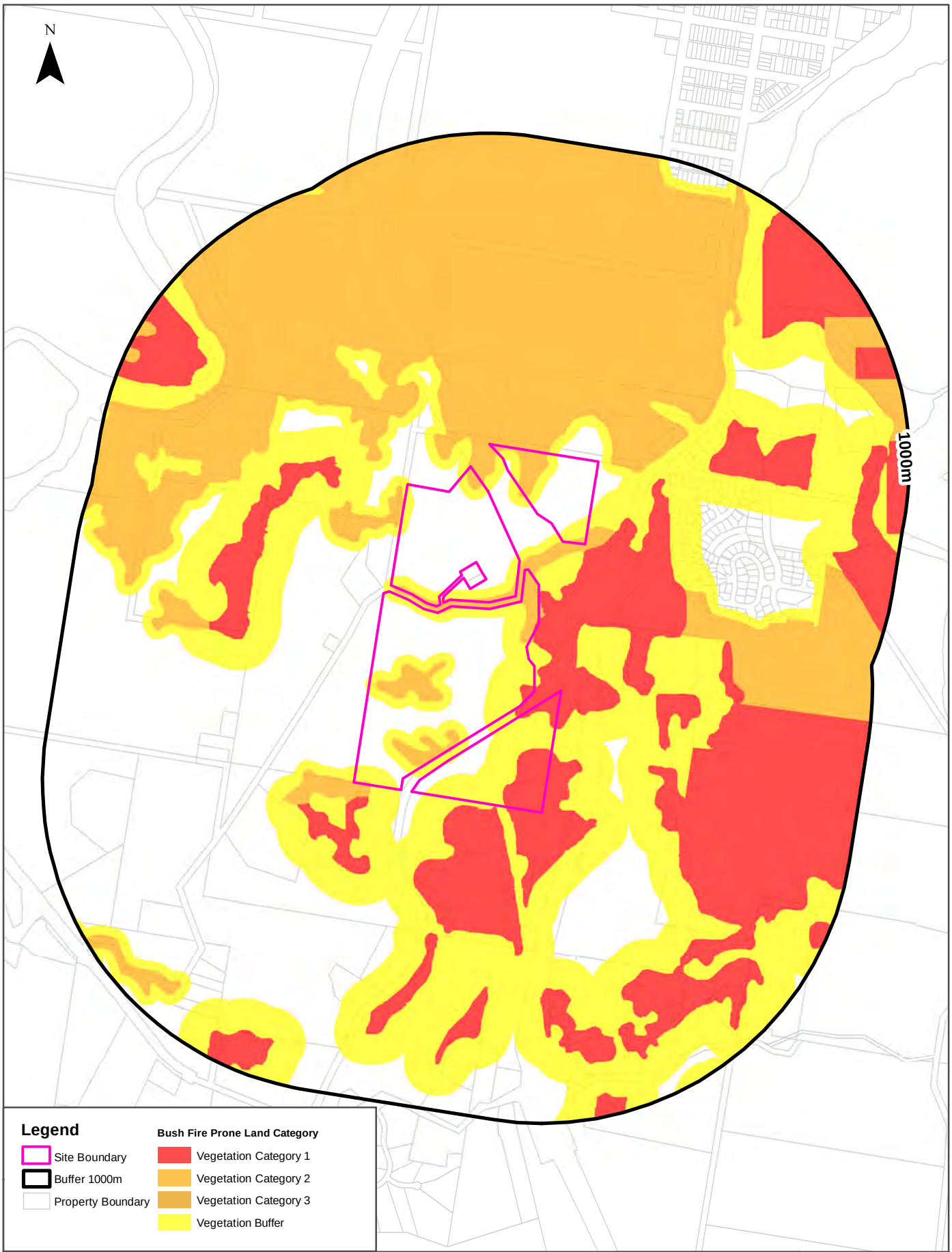
What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
N/A	No records in buffer								

Heritage Data Source: NSW Crown Copyright - Planning & Environment

Natural Hazards - Bush Fire Prone Land

66 the Saddle Road, Brunswick Heads, NSW 2483



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2021. Property Boundaries: © Department Finance, Services & Innovation 2021

Coordinate System: GDA 1994 MGA Zone 56

Date: 09 September 2021

Natural Hazards

66 the Saddle Road, Brunswick Heads, NSW 2483

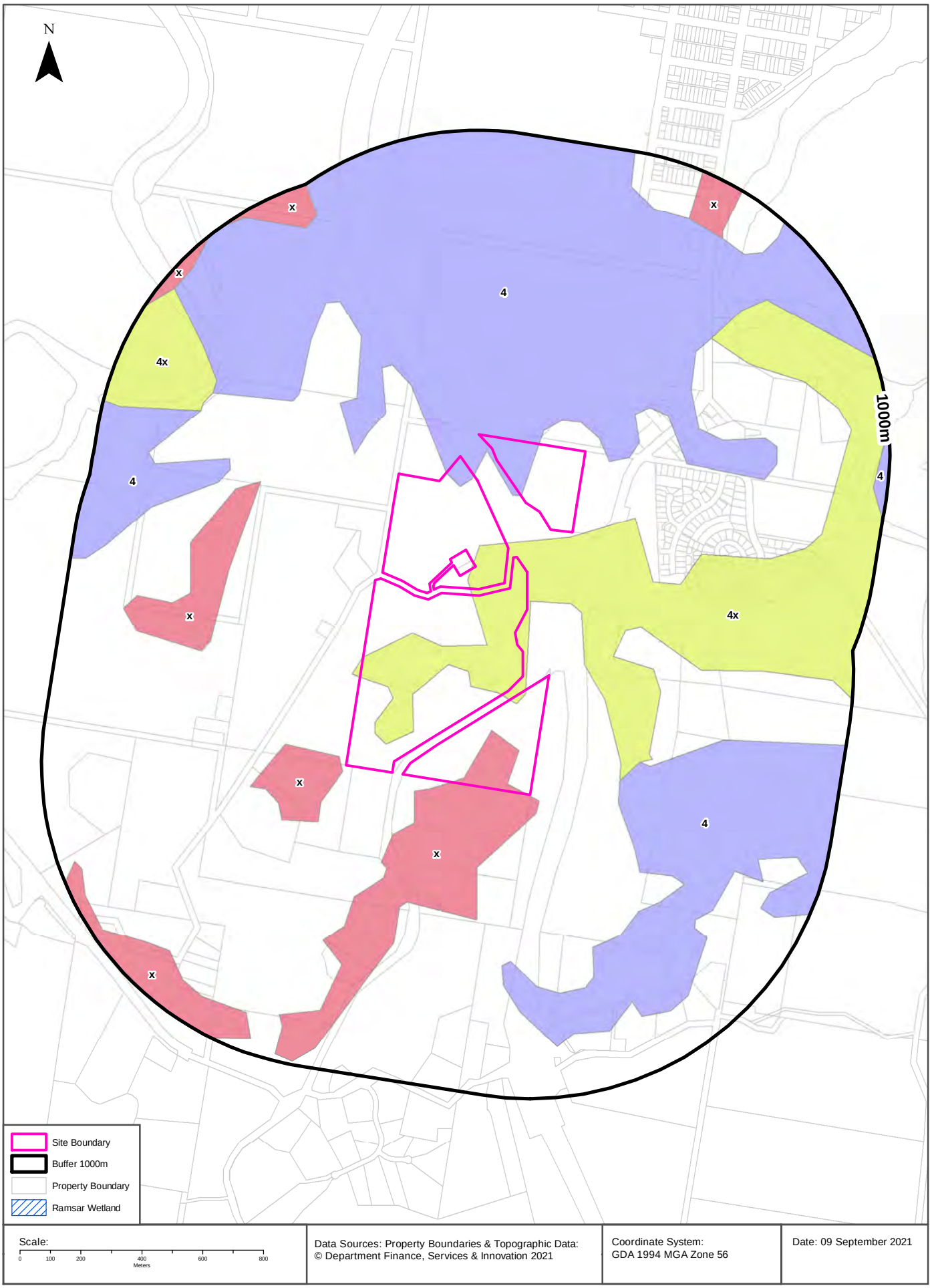
Bush Fire Prone Land

What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 1	0m	On-site
Vegetation Category 2	0m	On-site
Vegetation Buffer	0m	On-site

Ecological Constraints - Vegetation & Ramsar Wetlands

66 the Saddle Road, Brunswick Heads, NSW 2483



Ecological Constraints

66 the Saddle Road, Brunswick Heads, NSW 2483

Vegetation - Eastern Bushland Database (North Region)

What Vegetation exists within the dataset buffer?

Veg Code	Veg Desc	NVISCode	NVISDesc	Distance	Direction
4x	disturbed coastal complex	2	Coastal complex	0m	On-site
x	disturbed forest woodland	23	Disturbed bushland	0m	On-site
4	coastal complex	2	Coastal complex	0m	On-site

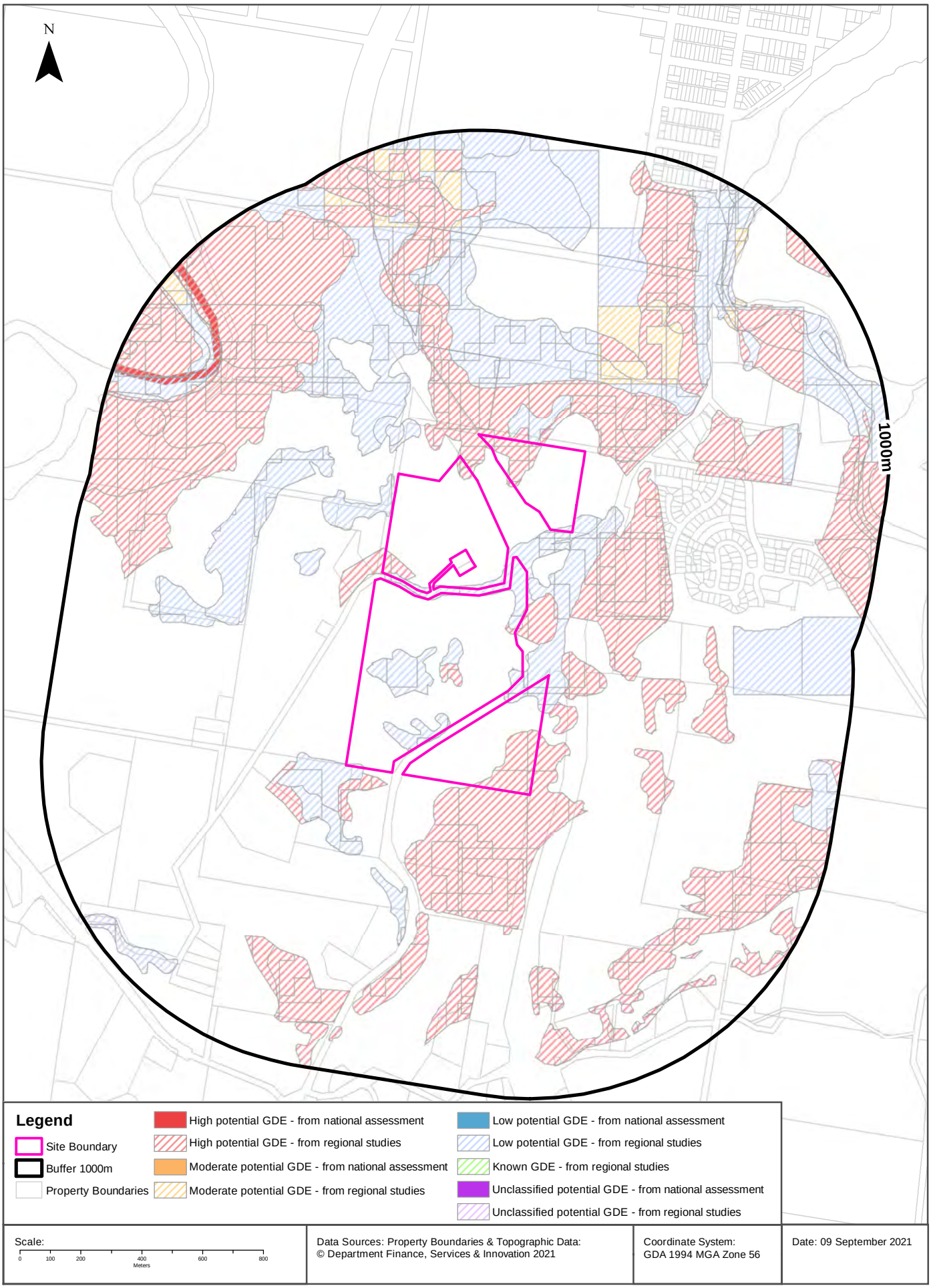
Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

66 the Saddle Road, Brunswick Heads, NSW 2483



Ecological Constraints

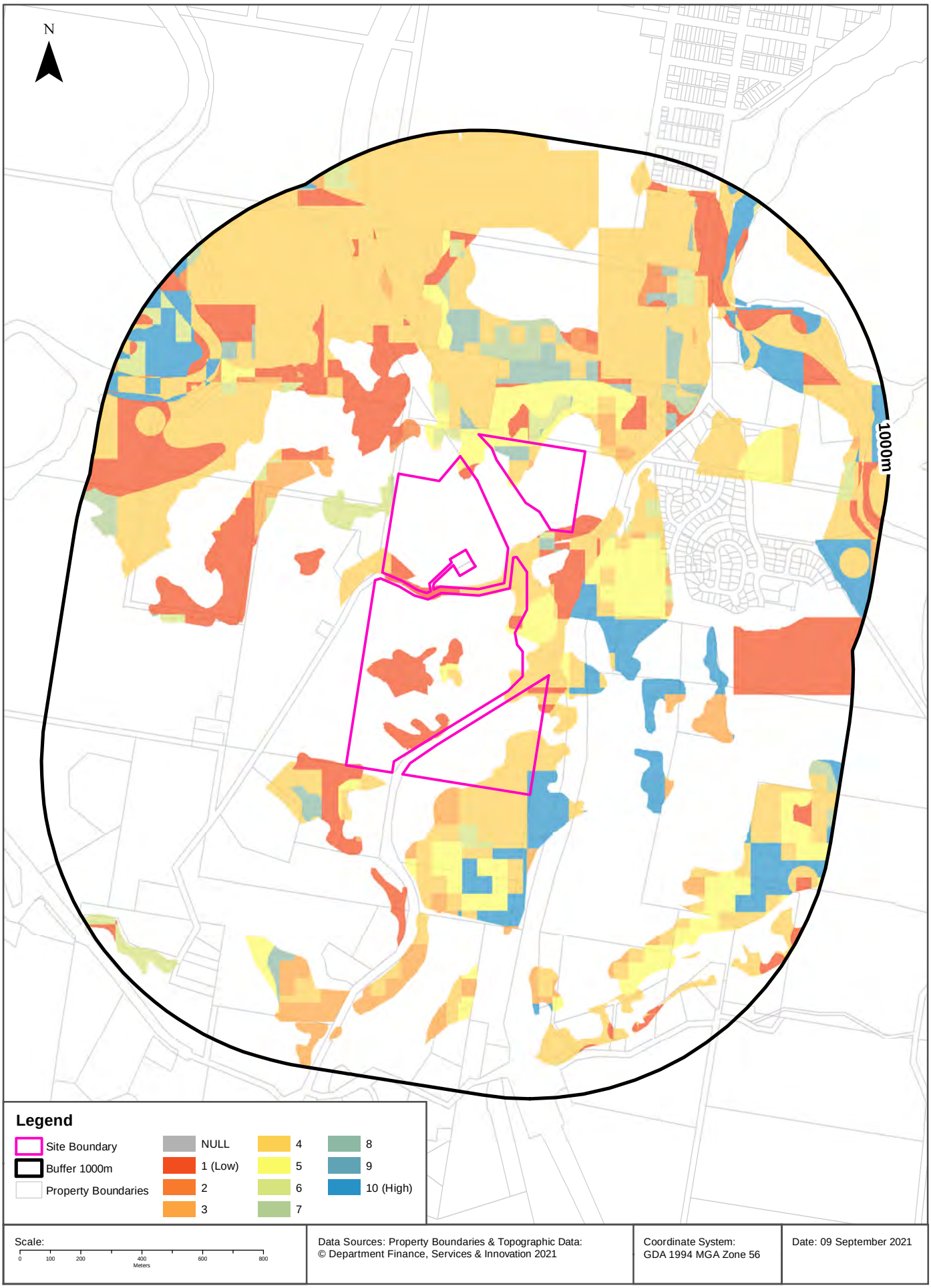
66 the Saddle Road, Brunswick Heads, NSW 2483

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	High potential GDE - from regional studies	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	Low potential GDE - from regional studies	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		0m	On-site
Terrestrial	High potential GDE - from regional studies	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		0m	On-site
Terrestrial	Moderate potential GDE - from regional studies	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		155m	North
Terrestrial	Low potential GDE - from regional studies	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		191m	North
Terrestrial	Moderate potential GDE - from regional studies	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		235m	North East
Terrestrial	High potential GDE - from regional studies	Plateau flank dissected into narrow strike ridges and valleys.	Vegetation		484m	North
Terrestrial	High potential GDE - from regional studies	Undulating granitic plateau with higher residuals including basalt cappings.	Vegetation		647m	South West
Terrestrial	Moderate potential GDE - from regional studies	Plateau flank dissected into narrow strike ridges and valleys.	Vegetation		653m	North West
Aquatic	High potential GDE - from national assessment	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	River		686m	North West

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

66 the Saddle Road, Brunswick Heads, NSW 2483



Ecological Constraints

66 the Saddle Road, Brunswick Heads, NSW 2483

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	4	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	8	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	4	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		0m	On-site
Terrestrial	10	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	5	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	3	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	6	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		0m	On-site
Terrestrial	1	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		0m	On-site
Terrestrial	7	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		0m	On-site
Terrestrial	3	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		0m	On-site
Terrestrial	8	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		25m	North East
Terrestrial	6	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		50m	North
Terrestrial	2	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		72m	North
Terrestrial	7	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		191m	North
Terrestrial	1	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		235m	North East
Terrestrial	2	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		319m	North East
Terrestrial	6	Plateau flank dissected into narrow strike ridges and valleys.	Vegetation		484m	North
Terrestrial	5	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		533m	West
Terrestrial	10	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		595m	North East
Terrestrial	10	Plateau flank dissected into narrow strike ridges and valleys.	Vegetation		596m	North East
Terrestrial	3	Undulating granitic plateau with higher residuals including basalt cappings.	Vegetation		647m	South West
Terrestrial	2	Plateau flank dissected into narrow strike ridges and valleys.	Vegetation		653m	North West

Aquatic	10	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	River		686m	North West
Aquatic	4	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	River		979m	North West

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

Ecological Constraints

66 the Saddle Road, Brunswick Heads, NSW 2483

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Assa darlingtoni	Pouched Frog	Vulnerable	Not Sensitive	Not Listed	
Animalia	Amphibia	Crinia tinnula	Wallum Froglet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	Litoria olongburensis	Olongburra Frog	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Amaurornis moluccana	Pale-vented Bush-hen	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardenna carneipes	Flesh-footed Shearwater	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris canutus	Red Knot	Not Listed	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris melanotos	Pectoral Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris tenuirostris	Great Knot	Vulnerable	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Carterornis leucotis	White-eared Monarch	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Coracina lineata	Barred Cuckoo-shrike	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Cuculus optatus	Oriental Cuckoo	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Cyclopsitta diophthalma coxeni	Coxen's Fig-Parrot	Critically Endangered	Category 2	Endangered	
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Esacus magnirostris	Beach Stone-curlew	Critically Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Fregata ariel	Lesser Frigatebird	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Fregata minor	Great Frigatebird	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Gelochelidon nilotica	Gull-billed Tern	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Grus rubicunda	Brolga	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gygis alba	White Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus fuliginosus	Sooty Oystercatcher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus longirostris	Pied Oystercatcher	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Hirundo rustica	Barn Swallow	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Irediparra gallinacea	Comb-crested Jacana	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Lichenostomus fasciogularis	Mangrove Honeyeater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Onychoprion fuscata	Sooty Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pluvialis fulva	Pacific Golden Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Podargus ocellatus	Marbled Frogmouth	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pterodroma leucoptera leucoptera	Gould's Petrel	Vulnerable	Not Sensitive	Endangered	
Animalia	Aves	Pterodroma neglecta neglecta	Kermadec Petrel (west Pacific subspecies)	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Pterodroma nigripennis	Black-winged Petrel	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus magnificus	Wompoo Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus regina	Rose-crowned Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Thalasseus bergii	Crested Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Thinornis cucullatus cucullatus	Eastern Hooded Dotterel	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Todiramphus chloris	Collared Kingfisher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa brevipes	Grey-tailed Tattler	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto longimembris	Eastern Grass Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Gastropoda	Thersites mitchellae	Mitchell's Rainforest Snail	Endangered	Not Sensitive	Critically Endangered	
Animalia	Insecta	Argynnis hyperbius	Laced Fritillary	Endangered	Not Sensitive	Critically Endangered	
Animalia	Insecta	Phyllodes imperialis southern subspecies	Southern Pink Underwing Moth	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Chalinolobus nigrogriseus	Hoary Wattled Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Dugong dugon	Dugong	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Eubalaena australis	Southern Right Whale	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Kerivoula papuensis	Golden-tipped Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Megaptera novaeangliae	Humpback Whale	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctimene robinsoni	Eastern Tube-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus bifax	Eastern Long-eared Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered Population, Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Planigale maculata	Common Planigale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Potorous tridactylus	Long-nosed Potoroo	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pseudomys novaehollandiae	New Holland Mouse	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Syconycteris australis	Common Blossom-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Eretmochelys imbricata	Hawksbill Turtle	Not Listed	Not Sensitive	Vulnerable	
Animalia	Reptilia	Pseudonaja modesta	Ringed Brown Snake	Endangered	Not Sensitive	Not Listed	
Animalia	Reptilia	Suta flagellum	Little Whip Snake	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia bakeri	Marblewood	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acronychia littoralis	Scented Acronychia	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Archidendron hendersonii	White Lace Flower	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Arthraxon hispidus	Hairy Jointgrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Backhousia subargentea	Giant Ironwood	Endangered	Category 3	Not Listed	
Plantae	Flora	Belvisia mucronata	Needle-leaf Fern	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Bosistoa transversa	Yellow Satinheart	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Casuarina obesa	Swamp She-oak	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Corokia whiteana	Corokia	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Cryptocarya foetida	Stinking Cryptocarya	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Cynanchum elegans	White-flowered Wax Plant	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Davidsonia jerseyana	Davidson's Plum	Endangered	Category 2	Endangered	
Plantae	Flora	Davidsonia johnsonii	Smooth Davidson's Plum	Endangered	Not Sensitive	Endangered	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Dendrocnide moroides	Gympie Stinger	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Desmodium acanthocladum	Thorny Pea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Diospyros mabacea	Red-fruited Ebony	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Diploglottis campbellii	Small-leaved Tamarind	Endangered	Category 2	Endangered	
Plantae	Flora	Drynaria rigidula	Basket Fern	Endangered	Category 3	Not Listed	
Plantae	Flora	Elaeocarpus williamsianus	Hairy Quandong	Endangered	Category 3	Endangered	
Plantae	Flora	Endiandra floydii	Crystal Creek Walnut	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Endiandra hayesii	Rusty Rose Walnut	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Endiandra muelleri subsp. bracteata	Green-leaved Rose Walnut	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Floydia praealta	Ball Nut	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Fontainea australis	Southern Fontainea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Geodorum densiflorum	Pink Nodding Orchid	Endangered	Category 2	Not Listed	
Plantae	Flora	Gossia fragrantissima	Sweet Myrtle	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Grevillea hilliana	White Yiel Yiel	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Harnieria hygrophiloides		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Hicksbeachia pinnatifolia	Red Boppel Nut	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Knoxia sumatrensis		Presumed Extinct	Not Sensitive	Not Listed	
Plantae	Flora	Lindsaea brachypoda	Short-footed Screw Fern	Endangered	Category 3	Not Listed	
Plantae	Flora	Macadamia integrifolia	Macadamia Nut	Not Listed	Not Sensitive	Vulnerable	
Plantae	Flora	Macadamia tetraphylla	Rough-shelled Bush Nut	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Marsdenia longiloba	Slender Marsdenia	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Melicope vitiflora	Coast Euodia	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Niemeyera whitei	Rusty Plum, Plum Boxwood	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Ochrosia moorei	Southern Ochrosia	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Owenia cepiodora	Onion Cedar	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Peristeranthus hillii	Brown Fairy-chain Orchid	Vulnerable	Category 2	Not Listed	
Plantae	Flora	Phaius australis	Southern Swamp Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Phyllanthus microcladus	Brush Sauropus	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Randia moorei	Spiny Gardenia	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Rhodomyrtus psidioides	Native Guava	Critically Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Senna acclinis	Rainforest Cassia	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Syzygium hodgkinsoniae	Red Lilly Pilly	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Syzygium moorei	Durobby	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Tinospora tinosporoides	Arrow-head Vine	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Tylophora woollsii	Cryptic Forest Twiner	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Uromyrtus australis	Peach Myrtle	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Xylosma terrae-reginae	Queensland Xylosma	Endangered	Not Sensitive	Not Listed	

Data does not include NSW category 1 sensitive species.

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Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
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Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

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B Photos

Photo A Entry off Gulgan Road Looking North

Photo B Northern elevated portion of site looking South

Photo C Elevated Portion looking East

Photo D Elevated Portion looking West