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9 March

Danny O'Brien Dowd and Co Lawyers 3/355 Queen Street Brisbane QLD 4000

Email - dobrien@dowdandco.com.au

Dear Mr O'Brien

NORTH MACLEAN ENTERPRISE PRECINCT EPBC Referral Preliminary Assessment (REF NO 2013/6941)

There was a public notice in the Jimboomba Times on 25/02/15 last week for the North Maclean industrial area - known as North Maclean Enterprise Precinct. This Federal Government public comment period commenced on 23 February and closes by 9 March. The community has an opportunity to comment about this matter in this time frame. I have spoken with people in the local area this week and since 2005 about this issue, and the community still is very much opposed to this, just as it has been since 2005 (when it was proposed in the Mt Lindesay North Beaudesert Study Area under the Office of Urban Management and later included in the SEQRP – Queensland Govt).

The Logan and Albert Conservation Association Inc (LACA) opposes this proposal, it should not be approved. We have outlined our concerns in a detailed submission.

LACA works with the community to improve environmental outcomes in the Logan City Council and Scenic Rim Regional Council Areas. Our group has been following this matter for 10+ years. During the last 10 years, LACA has made submission to ALL local and state government planning processes . Many of our members are long term residents of Logan and Scenic Rim Council areas who have actively attended workshops in relation to planning matters for these council areas and for South east Queensland (e.g. SEQRP, Bromelton, Greater Flagstone Area, Park Ridge Structure Planning, Beaudesert Shire Council Planning Schemem 2005, LCC Draft Planning Scheme 2014, Koala Planning policies at local and state, strategic planning documents, state government SPP). In 10+ years and even before 1996 there has been no meeting of the community held to consult them specifically about the North Maclean Enterprise Precinct. Every other stage of planning (outlined briefly above) has been based on the premise that the background studies, investigations and community support for the proposal had been obtained – this is NOT the case. This proposal should not be approved and the community and environment groups in this area have been saying the same thing for 10 + years, being ignored at all local and state government levels. LACA's real concerns regarding the devastating environmental impacts from this proposal have NEVER been addressed. This is unacceptable to our organization, to the environment, to the community.

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The current application is for the property bordered by Crowson Lane to the north, Mt Lindesay Highway to the east, and rural residential properties to the south and west. The surrounding land use is rural residential to the north, south, east and west of the property.

This application does not include

- A draft final plan at this stage and the application states this.
- There is no final stormwater plan indicating on site treatment of stormwater.
- There is no detailed environmental or social impact assessment for the community to comment on.
- No detailed fauna assessment, surveys, or trapping have been conducted and they need to be because as Wildnet data indicates there are rare and threatened species associated with this site, but very few people in the community actually report their sightings. Consequently, these known sightings under report the extent of biological diversity and species in this area at and around the North Maclean site
- There has been no traffic report estimating traffic flows and increased traffic movement yet we are aware that traffic counters have been placed along the Mt Lindesay Highway in recent months and in the past
- There is no report about the existing risk or predicted future risk to fauna of road kill for this site and general location that would need to offset if this application was approved. However, Wildnet sightings, Wildcare data, LCC fauna data sets, Moggil Koala Hospital, Daisy Hill Koala Centre & Ambulance, local wildcare groups such as Brisbane Area Rescue Network, have extensive data sets indicating rising numbers of roadkill. Roadkill species immediately in the North Maclean area include
 - spotted tail quolls (Greenhill Rd near corner of Crowson Lane, Teviot Rd near Koolena Rd intersection, Mt Lindesay Highway 50 meters south of Carters Rd)
 - koalas (Mt Lindesay Highway , Teviot Rd)
 - brushtail possums (Crowson Lane and other local roads)
 - eastern grey kangaroos (Crowson Lane, Greenbank Rd, Scotts Lane mt Lindesay Highway)
 - red neck wallabies (Crowson Lane, Greenbank Rd, Scotts Lane)
- There is no information about any proposed hours of operation.
- No needs case has ever been presented for the North Maclean Enterprise Precinct . There is a brief and biased economic argument in this current application without any detailed environmental or social impact assessment.
- The proposed offsets are unacceptable to the environment and community

There is no plan indicated for buffers to the surrounding community – the applicant states their intention is to clear the whole 117 hectares over a period of 5 years. This is unacceptable to the community

The lack of information given to the community about this proposed development has continued for at least 10 years by both local and state government. This is extremely concerning, especially because the community has been told for many years by local and state government, that further investigations were necessary on the property and that 'context plans' will be made available for the community to be consulted about in due course in the future. There is still no detailed studies or investigations or context plans at this stage for the community to comment on as part of this Federal Government EPBC Referral Preliminary Assessment. This information should be available now for the community and federal government to comment on, not after a decision is made.

In 2014, the Logan City Council (LCC) proposed a new Draft Planning Scheme – during this process I and other residents contacted LCC town planners by telephone to ask advice about how to comment about the North Maclean Industrial Area. I was specifically concerned that there was no evidence on the Draft Planning Scheme of any provisions for buffers for the existing rural residential communities. I was told that the North Maclean Enterprise Area was a state government matter and that there would be another opportunity to comment about

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the North Maclean Enterprise Precinct at another time. However, I still included my comments about the North Maclean Enterprise Precinct in my submission to LCC in 2014. This is only one example of how the community is not being consulted at any planning stage by local or state government about the North Maclean Enterprise Precinct .

Yours sincerely,

Anne Page (M Env Mgt , BA Hons Dip Ed) 22-28 Stanley Court Munruben QLD 4125 Ph 3297 0624

President
Logan and Albert Conservation Association Inc

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NORTH MACLEAN ENTERPRISE PRECINCT EPBC Referral Preliminary Assessment (REF NO 2013/6941)

SUBMISSION BY LOGAN AND ALBERT CONSERVATION ASSOCIATION INC

Written by Anne Page (MENV MGT)

LACA PRESIDENT
(also a resident of Stanley Court Munruben for 24 years)

KEY ISSUES OF CONCERN

This proposed industrial development should not be approved. It should not be approved subject to further investigations. LACA does not support any proposal for the development of the proposed site for industry and business development. LACA does not support the offset proposal in this application at all. If this development was approved, it will contribute to the loss of ecological values in the region and local area that cannot be replaced, it will contribute to local extinction of species. It will have direct, indirect and cumulative environmental and social impacts that have not even been considered by this application. There is a very biased economic report given in this application by the applicant who stands to profit greatly at a huge and significant environmental, social and community cost. This is unacceptable to the community and the environment. There is no social contract from the community in relation to this proposal.

LACA's major concerns are-

1. MELALEUCA IRBYANA (FEDERALLY ENDANGERED COMMUNITY)

The applicant intends to clear the whole site, all 117 hectares, despite areas of Federally Endangered community Melaleuca irbyana on the property. The applicant admits it is likely additional impacts will occur to Melaleuca irbyana on neighbouring properties to the south of the site as well as a result of drainage changes to this current property. Melaleuca irbyana is a vegetation community which is listed as federally endangered. Its distribution extends only through Jimboomba and Ipswich with scattered pockets of this vegetation. This endangered community is not found anywhere else in the world and is a unique and distinctive feature in this region. It should not be cleared. This proposal should not be approved.

2. ESSENTIAL CORE HABITAT AND STEPPING STONE IN LANDSACPE

The 117 hectare size of the property at 4499-4651 Mt Lindesay Highway provides an essential core habitat. This is one of very few properties of this large size that still exist in this region of Logan City Council and SE Qld. When considered from a landscape perspective, this property is important stepping stone for many species in the local and regional landscape, including federally listed species. The habitat on the site still has linkages and connectivity of habitat with neighbouring properties to the north, south, south-west and west of the property. This means that the habitat on this property is an essential and important habitat and stepping stone in the landscape. This connected habitat should be protected and retained, not cleared. Logan City Council's Koala Conservation Strategy 2013 – 2023 also reinforces the need to retain and connect habitat linkages. . http://www.logan.qld.gov.au/ data/assets/pdf_file/0006/287691/2014-Logans-Koala-Conservation-Strategy.pdf

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3. SPOTTED TAIL QUOLLS (FEDERALLY ENDANGERED)

(1) This application wrongly states that "proposed action is considered unlikely to cause a significant impact on the spotted tailed quoll and that no further mitigation or management is proposed in regard to this species" (Part 1 p 21).

This statement is clearly indicating a lack of understanding of the significance of the quoll species as a federally endangered species, a lack of knowledge about this quoll population in general in and around the North Maclean site, the relationship between these sightings and other sightings further north, east, south and west of the North Maclean area in the broader landscape. This is why a decision CANNOT be made of this proposal until extensive, long term and seasonal studies are conducted in this region. The applicant has not conducted any on-ground field surveys for spotted tail quolls or any other fauna on the site despite 10+ years of intending to do this action. This certainly indicates that the applicant is neglectful in their environmental duty of care in relation to this matter (ESD principle). There is currently enough information to indicate that the PRECAUTUIONARY PRINCIPLE NEEDS to be applied in this instance. No approval should be given for this development. Investigations of this level of critical importance should be done prior to decision making by all levels of government and for community consultation periods. The omission of this information at this time for the community and government is misleading them in relation to the significance of this species in this area.

(2) COMMUNITY REPORTED SPOTTED TAIL QUOLL SURVEYS BY DR SCOTT BURNETT

Dr Scott Burnett wrote to the OUM in 2006 stating that all remaining habitat in the Mt Lindesay North Beaudesert Study Area should be regarded as potential habitat for quolls (SEE **ATTACHMENT 1**). To date, sightings of quolls continue to be reported from the areas at and surrounding the North Maclean site from

- the community sightings to date ,
- quoll dog tracking on LCC reserves (limitations problems with detecting scat scent during the wetter years from Nov 2011 to 2015 when this survey method has been used in the local area),
- Main Roads survey at Chambers Creek (Jerry's Downfall)

However, little definite information is still known about the spotted tail quoll population in this landscape , for example

- Population size?
- Breeding rates and replacement rate of the current population?
- Which locations are important for breeding? For foraging? For shelter? Which locations provide habitat linkages between important habitat in the local area of North Maclean and the wider landscape?
- Which parts of the landscape are being used by quolls?
- Where they are coming from?
- Where they are moving to?
- What size habitat area do they require in this landscape to persist and be resilient in the long term in this
 local area and region? How will the cumulative impacts of this industrial development and other
 developments proposed in the SEQRP have an impact on the future short term and long term survival of
 this species?
- How will habitat need change over time in response to climate change impacts on this species?
- Are the local sightings at North Maclean only juvenile quolls dispersing through the area or is this area linked to the other sightings for breeding purposes?
- How do quolls use this landscape differently in wet and dry periods (more community quoll sightings for the North Maclean site have been reported in the extended dry season from 2000 – 2010). What role does the North Maclean site play in terms of providing forage and shelter in dry seasons? How will this function be met in the future if the site is developed and all habitat removed from the site?

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 What connection is there (if any) with the confirmed live sighting of a spotted tail quoll near Mt Alford in Scenic Rim Regional Council area (photographic evident through camera surveillance method) . Road kill have been previously reported from neighbouring areas in Scenic Rim region eg.Laravale, near entrance to Wyaralong Dam

This application wrongly states that " the proposed action will not affect the habitat in which the spotted tail quoll has been most recently recorded in the locality of Jerry's Downfall Reserve". The most recent quoll sighting in the area near North Maclean comes from Teviot Rd near the corner of Leanne Court (approximately 3 kilometres NW from the North Maclean site) – there is no current information as to what links if any there are between this sighting and any of the sightings associated with the North Maclean site, or even the sightings from around Norris Creek (north of Crowson Lane).

(3) According to the community sightings, dead quoll specimens collected (2 in Queensland Museum) and scat found, the area of North Maclean and the broader landscape of this area is being used by spotted tail quolls. However, this application has no quolls or other fauna surveys, camera surveillance, no long term or seasonal surveys that have been conducted at all, despite this North Maclean Enterprise Precinct being proposed before 1996 and advertised in the SEQRP documents since 2005.

The current application wrongly states (Part 1 p 20) the "community survey of quoll records to the north of Crowson Lane need to be acknowledged but of themselves do not indicate the occurrence of significant habitat for this species. Rather they are considered likely to report chance sightings of juvenile quolls dispersing through the landscape".

This application focuses significantly on offsetting habitat for the koala, however it gives no serious consideration to the Federally endangered spotted tail quoll sightings that have been reported from the immediate surrounding area of North Maclean, with other sightings from the wider landscape of this region as well. There is a deliberate underplaying of the significance of this species and the **multiple historical and recent sightings,in the immediate area of the North Maclean Enterprise Precinct,** with some dead specimens having been collected from the local area as well .

A total of 12 sightings of Federally Endangered species such as the <u>spotted tail quoll have been sighted both</u> <u>historically and recently in the immedate area of the proposed North Maclean Enterprise Precinct and up</u> to 3 kilometres from this proposed site in the following areas -

NORTH - CROWSON LANE

- one dead quoll observed the corner of Greenhill Rd and Crowson Lane (outside the LCC Council Depot site)
- two live quolls chasing each other around a tree at 71 79 Crowson Lane

WEST - ROSINA RD

- one live quoll sighting at 2 Rosina Rd quoll left a scat) there is a waterway on the north end of this property with a dam
- one live quoll sighting 142 Rosina Rd) this is near upstream of tributary located in west of North Maclean site
- one dead quoll was reported from Teviot Rd opposite the intersection with Koolena Rd (on the east side of Teviot Rd).
- one live quoll sighting from west end of Koolena Rd
- one live sighting of quoll on Teviot Rd near Leanne Court (3 km NW of North Maclean site) see
 Attachment 2

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SOUTH & SOUTH-WEST

- one historical quoll sighting from approximately 30 years ago at Scotts Lane (opposite the cemetery).
- one sighting in Beryl Parade (off Scott Lane/Greenbank Rd)

EAST

 one live sighting in St Aldwyn Rd North Maclean (near tributary that flows from the NE corner of North Maclean site to east of Mt Lindesay Highway)

SOUTH-EAST

• one live sighting in Smailes Rd North Maclean (east of Mt Lindesay Highway and Logan River)

MT LINDESAY HIGHWAY (NORTH OF NORRIS CREEK)

- one dead quoll (roadkill) specimen was collected from the Mt Lindesay Highway (about 50 metres south of the intersection with Carter Rd.
- live sightings of quolls on west side of Mt Lindesay Highway just south of Kooringal Rd

CHAMBERS CREEK (CONSERVATION AREA SOUITH OF GRANGER RD & North OF CHAMBERS FLAT RD , EAST OF MT LINDESAY HIGHWAY)

• confirmed quoll scat was found in Jerry's Downfall Reserve (Chambers Creek) south of Granger Rd

GREEBANK - GOODNA-SPRINGFIELD RD

• one dead quoll (roadkill) was found on Goodna-Springfield Rd between the Greenbank State School Environmental Park on the south-west side of the road ,opposite the old gate entrance to the Greenbank Military Training Area (on south west corner near Greenbank State School).

(SEE QUOLL SIGHTING MAP – Dr Scott Burnett's 2006 sightings with additional new sightings added from community sightings reported to Dr Scott Burnett 2011-2014)

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MAP 1 – Quoll Sightings (Dr Scott Burnett 2006, 2011-2014)

All of the above sightings were collected by Dr Scott Burnett (Quoll Biologist, University of Sunshine Coast from community reported sightings that have been ongoing since 2006 (one survey in 2006 and one survey 2011-2014). The extended dry period between 2000 and 2010 meant that many of the sightings reported during this period were within 150 metres of Waterways (SEE MAP OF QUOLL SIGHTINGS). Since November 2010 to 2015, the local area has received higher rainfall. In 2012 a live quoll sighting occurred on Teviot Rd (near the corner of Leanne Court 3 km NW of the North Maclean site).

In 2006, Dr Scott Burnett from Wildlife Queensland received funding from Beaudesert Shire council to conduct a survey of community reported sightings of spotted tail quolls in the suburbs of Spring Mountain, Greenbank, Munruben, North Maclean, South Maclean, Chambers Flat, Park Ridge South and Logan Reserve. Three roadkill specimens were reported: one from the Goodna-Springfield Rd at Greenbank (2004), one from Teviot Rd and one on the Mt Lindesay Highway near the intersection of Carter Road (2005). Two of these specimens are held in the Queensland Museum.

Table 1 REPORTED SIGHTINGS - SPOTTED TAILED QUOLL - SOUTH MACLEAN TO CAROLE PARK (Burnett 2006)

DATE	LOCATION	No	Source	DETAILS
10/08/06 Rep 11/08/06	Kirk Road CHAMBERS FLAT	1	Hajnal Ban column JT	7.30pm sighting in car headlights large quoll, good condition, apparently eating something on roadside
29/07/06 Rep 30/07/06	5 Koolena Rd GREENBANK	1	Media release JT	Daytime sighting in back yard. Ran from bushland to within feet of 3 observers – think may have been heading toward shed in yard
24/07/06 Rep 27/07/06	Farm Rd GREENBAN	1	Media release Jimboomba Times	7pm sighting quoll crossing Farm Road near Begley Road turnoff
07/07/06 - 20/07/06 Rep 28/07/06	91 Pakenham Rd GREENBANK	1	Media release Jimboomba Times	3 night sightings on property - large animal, good condition
End May 06 Rep 27/07/06	Logan Motorway near Wembly Rd overpass	1	Media release Logan Reporter	Logan Motorway approaching Wembley Rd overpass travelling east - night sighting of quoll crossing from wooded northern

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				side
17/04/06	34 Andrews Crt CHAMBERS FLAT	1	A Page	Chicken taken from pen between 1810 hrs and 1930 hrs while resident was absent (could be fox – dens in evidence and pen fence low). Quoll previously sighted briefly in tree late Nov 05
13/04/06	37 Lincoln Green FORESTDALE	1	IW	Quolls heard at night during week while land clearing through to Johnson Rd in progress. Live sighting previously (Nov/Dec 05)
8?/04/06	42 Lincoln Green FORESTDALE	1	IW	Live quoll in back yard
06/03/06	Teviot Rd near intersection of Koolena Rd GREENBANK	1	Flyer	Road kill 1m off road opposite Koolena Rd. Sighted mid- morning - not picked up - husband wouldn't stop
06/03/06	118 Eildon CI MUNRUBEN FOREST	1	Flyer	Live sighting in backyard around 6pm – running away. Bread left out for wildlife (possums and birds)
25/02/06	110 Rosia Rd PARK RIDGE	1	Flyer	Cat-like animal, long tail, spots, low profile, eating(?) bread left for wildlife (most likely after possums, which had been absent for a couple of days)
Feb/Mar 06 Rep 27/07/06	Tully Connection Rd GREENBANK	1	Media release Jimboomba Times	Early evening sighting while mountain bike riding at end of Tully Connection Rd. Animal turned and ran back into bushland
/06/05 – 01/06	Service Rd Mt Lindesay Highway MUNRUBEN	1	Flyer	5 early morning live sightings on property edge – heading toward rear of property. Hearing quolls at night up until January

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/11- 12/05	37 Lincoln Green FORESTDALE As previous record	1	QM	Sighted quoll in back yard at night – quoll stood ground initially. Still hearing quolls though not as frequently as during 05
/11- 12/05	Johnson Rd between Forestdale Dr and Peverill Street FORESTDALE	1	QM	Dawn sighting of ginger animal with white spots heading across road into Glider Forest
/08/05	162 Campbell Rd GREENBANK	1	QM	Live quoll killing chickens. Sighted up tree near chicken pen midnight weekend
04/07/05	42 Lincoln Green FORESTDALE As above	1	QM	Live quoll outside back door (alarmed residents' domestic cat) evening
02/07/05	St Aldwyn Rd NORTH MACLEAN	1	QM	Observed in morning
21/06/05	Centre line Mt Lindesay Highway 50m south of Carter Rd turnoff	1	IW QM	Young adult male – recent roadkill found early morning QM collection
/05/05	Norris Creek end of Mahogany Rd MUNRUBEN	1	Flyer A Page	Sighted early morning while horse-riding. Quoll small, appeared in good condition, running along dry creek bed
Mid- 2005 Rep 10/08/06	The Edwards Bridge Goodna Rd GREENBANK	1	Hajnal Ban column Jimboomba Times	Night sighting of dark, cat-size animal, light spots, jawline similar to thylacine crossing from north to south into Ison Rd reserve
2005	Greenbank Army Camp	3	Media release	

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	(GMTA)		Jimboomba Times
2005 Rep 30/07/06	Railway line end of Mountain Ridge Rd SOUTH	1	Media release Courier- mail
2005?	Lyndale Rd GREENBANK	1	Flyer
/12/04	220 Rosia Rd PARK RIDGE	1	Flyer
/08/04	40 Argule St HILLCREST	1	QM

05/07/04	Centre of northbound off-ramp from Centenary Highway at Carole Park	1	IW QM	Sub-adult male - roadkill from previous night
2004	Outside Munruben Works depot Greenhill Rd MUNRUBEN	1	A Page	Roadkill
1998- 2004	Chambers Flat Rd CHAMBERS FLAT S 27.74887 E 153.05811	5 ind ivi du al	QM	5 sightings over 8- year period
Winter 03	71-79 Crowson Lane MUNRUBEN	2	QM	2 quolls chasing in habitat tree in backyard

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c. 2000	Near Greenbank Primary School Goodna Rd GREENBANK	1	IW	Roadkill – resulted in Wildlife Corridor signage approaching Oxley Creek
Rep 30/07/06	2 Rosina Rd NORTH MACLEAN	1	IW	Possible sighting of live quoll on own and neighbouring property
	43 Wishaw Rd NORTH MACLEAN	1	A Page	Night sighting of live quoll on property by neighbours
1991 Rep 02/08/06	Scott Lane NORTH MACLEAN	1	Media release Jimboomba Times	Quoll trapped in shed on chicken farm. Released in Greenbank area.

4). As quolls are rare and highly migratory (moving up to 21 km in one night) so, any one off quoll surveys **would most likely not achieve** confirmed sightings of quolls. One local Greenbank resident and wildlife carer for Brisbane Area Rescue Network) reported a quoll sighting from 4 April 2011 at 110 Attunga Rd Greenbank. The resident reported seeing 1 quoll at 10.20 pm approximately - she saw an animal running, it went towards her dam. Something had been stealing chickens from her neighbour next door for years and the resident had often seen decapitated chickens left on her driveway and around her dam. The resident has a 10 acre property. Since the sighting, she set up camera surveillance for months and has still not successfully recorded a camera image of a quoll.

In November 2010 quoll surveys in Lamington National Park included camera surveillance but still failed to capture photographic records of quolls. Burnett (2010) reported "The Queensland Border Ranges, and Lamington National Park in particular, are a recognised population hotspot for the spotted-tailed quoll *Dasyurus maculatus* (e.g. Watt 1993). Previous camera trapping surveys in the Binna Burra and O'Reilly's sections of the National Park (Burnett and Holmes 2008) failed to locate any quolls although community sightings around this time indicated that the species was present there. Intermittent quoll sightings continue to be reported from the Binna Burra section of Lamington National Park (Quoll Seekers Network database, 30/11/2010)".

5). Timing of Dr Burnett's Surveys

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No spotted tail quoll surveys or detailed fauna surveys have been conducted by the applicant for the North Maclean site.

The reported community sightings of quolls from 2003 to 2006 recorded by Dr Scott Burnett, indicated that the greatest number of community sightings were recorded for the months of July and August ("during a time when juvenile males would be dispersing" Burnett 2007) see **Table 2**.

Burnett's study in 2006 was also conducted during prolonged dry conditions experienced in Southeast Queensland. Higher rainfall has been received in the North Maclean Area since Nov 2011. Water and food sources have been more abundant in the local landscape in this period, which may reduce the likelihood of observing quolls in poultry sheds and bird avaries.

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Table 2 - QUOLL SIGHTINGS - MONTHS OF YEAR (Data Current to 14/08/06)

MONTHS	2006	2005	2004	2003	TOTAL
January					
February	2				2
March	2				2
April	2				2
May	1	1			2
June	0	1		winter*	1*
July	3	2	1	winter*	6*
August	1	1	1	winter*	4*
September					
October					
November		2			2
December		2	1		3
TOTAL	11	9	3	1*	24

Source: Dr Scott Burnett's data from Community Quoll Sightings conducted in 2006 for Beaudesert Shire Council

NOTE:

* 1 sighting reported as winter 2003 and not by individual month

EXCLUDED:

- 1. Year only results reported for 4 sightings have not been included in table.
- 2. 1 sighting reported over a period 6/2005 1/2006 has not been included.

6). COMMUNITY SIGHTINGS REPORTED IN 2011

In February to April 2011, the Logan and Albert Conservation Association received more current community sightings of quolls during a survey of community sightings of local fauna (see **Table 2**) and this information was forwarded to Dr Scott Burnett's research assistance, Ivell Whyte for verfication . Additional sightings were reported from the Chambers Flat Area, they have not been included in this document – please contact Dr Scott Burnett SBurnett@usc.edu.au and Ivell Whyte for this information .

TABLE 2 - QUOLL SIGHTINGS, GREENBANK AREA(February to Jan 2012)

DATE OF SIGHTING	LOCATION OF SIGHTING	NUMBER	DETAILS
4 April 2011	110 Attunga Rd Greenbank 4124	1 live	Resident reported seeing 1 quoll at 10.20 pm approximately - she saw an animal running , it went towards her dam. Something has been

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2008	Corner Andrews Rd and Middle Rd Greenbank	1	stealing chickens from her neighbour next door for years (he has lots of chickens) . Kate has often seen decapitated chickens left on her driveway and around her dam. 10 acre property. Quoll – running across road , almost hit it
2009	Near the Plant Shop going into Army Camp (Middle Road)	2	Quoll – running across road
Nov or Dec 2010	Corner of Andrew Rd and Middle Rd on island located south of roundabout	1	Quoll ran across the road 9.30 pm into planted refuge area of island, long body and tail (tail as long as body) running tail straight our, low slung cat) from the park to the refuge island on the road . near the first roundabout driving north on Middle Rd from Greenbank
?	142 Rosina Rd North Maclean	1	Resident reported seeing a live quoll walk past a window of her house. The animal had white spots .she discussed her sighting with another resident of Rosina Rd
Sept 2010	Seen on West side of Goodna-Springfield Rd north of the corner of Thompson Rd (opposite the Greenbank Military Training Area) GPS	1	Quoll – 10 am in morning walking/running in long grass on west side of Goodna-Springfield Rd (brown body with white spots). She has signed a Statutory Declaration.
Jun 2010	She was driving south from Springfield towards Greenbank on the Goodna-Springfield Rd and an animal ran out onto the road at about 9 pm at night at the spot around where the Greenbank State School Pool was.	1	Live quoll crossing road from west side to east side (Greenbank Military Area) at approx 9 pm
1996?	54-60 Beryl Parade NORTH MACLEAN	1	Camp Cable Rd resident reported seeing spotted tail quolls here about 10 years ago (reported to LACA after 2005)

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January 2012	Observed on Teviot Rd	1	Lady was driving south on Teviot Rd just south of
(1.43 am)	just south of corner of		corner of Leanne Court Greenbank . One live quoll
	Leanne Court		crossed Teviot Rd from west side to east side. It
	Greenbank (crossing		was at night time 1.40 am and the lady slowed to let
	from west to east side of		the animal cross the road. She had headlights on and
	road).		the animal turned its head towards the car. A brown
			animal with white spots on body and tail.

Source: Logan and Albert Conservation Association 2015

Table 2 confirms one of the most recent live spotted tail quoll sighting occurred on Teviot Road (near the corner of Leanne Court approximately 3 km NW of the North Maclean site). Please contact Dr Scott Burnett for the most up to date list of recent quoll sightings for the 2011-2014 survey conducted for Logan City Council.

7) The application wrongly states that "the proposed action will not affect the potential movement corridor along Norris Creek between Jerry's Downfall Reserve and the large area of conserved habitat to the northwest of the subject site ". (do they mean Norris Creek? Or do they mean Mr Anderson's property on Corner of Teviot Rd and Greenbank Rd which under the SEQRP is proposed to have 30 000 people and high density resident development?)

This application does acknowledge that quolls occur in this landscape area. However, it makes some very broad and incorrect assumptions (precautionary principle) about quolls and their movement in this landscape – this information is unknown at this stage. The underlying assumption being made in the application is that any quolls in the local area will use Norris Creek and Jerry's Downfall (Chambers Creek) area and crossings. This information just isn't really known at this stage. The precautionary principle must be applied. The assumption is made (and a statement is made) to the effect that Norris Creek has more biodiversity value than the North Maclean site . This argument is extremely debatable and inaccurate for many reasons.

One reason is that the Norris Creek corridor is only a narrow corridor of remnant native vegetation and currently there is only a very small existing LCC reserve area called Wearings Reserve which extends west from the Mt Lindesay Highway to just west of Greenhill Rd. The narrow widths of the open space corridors encourages edge effects and the invasion by introduced species which will reduce the value of these corridors for habitat connectivity and biodiversity. The habitat along this waterway is very narrow in places, has been encroached on by the surrounding rural residential activities, weeds and feral species. There is no reserve on the east side of the Mt Lindesay Highway. There is no reserve that connects the east side of the highway to Chambers Creek (Jerry's Downfall Reserve). However, there are sightings of live koalas at multiple times each year and quoll sightings within close proximity to the Norris Creek. This corridor also has other biodiversity such as yellow bellied gliders, sugar glider, feather tail gliders, bandicoots, glossy black cockatoos and rare remnant vegetation associated with this corridor. The second argument to refute statements made in the application, is that a large area of core habitat such as the North Maclean site which is 117 hectares large (plus the additional Lots surrounding this property also proposed for future industrial development, but not included in this application), cannot be regarded as of less conservation value than that the narrow corridor along

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Norris Creek, especially given the variety of koala, quoll, glossy black cockatoo and other species sightings associated with this site at North Maclean.

The unique and federally endangered biodiversity at North Maclean will have a better outcome if Norris Creek, Chambers Creek, Jerry's Downfall Reserve and the large remaining areas of habitat such as the North Maclean site and the property on the corner of Teviot Rd and Greenbank Rd are retained for conservation, recreation and leisure purposes.

DEGRADATION OF BIOREGIONAL CORRIDORS

The location of the proposed North Maclean site lies between and adjacent to the state bioregional corridors (DERM Queensland Government) of

- Greenbank Military Training Area Greenbank East- Munruben Wetlands Reserve (Chambers Creek) - Chambers Flat - Logan River- Stockleigh - Birnam Range and Mt Tamborine
- Logan River corridor
- Karawatha to Flinders Peak Corridor (including linkages from Karawatha to Greenbank Military Training area and surroundings to Flinders Peak)

The existing vegetation on and around the site provides valuable habitat linkages and the site itself is a critical habitat area and stepping stone to these bioregional corridors. Some remnant and regrowth vegetation exists on and adjacent to the site. This proposed development will contribute to the fragmentation of habitat, fragmentation of linkages to the bioregional corridors, degraded water quality for Logan River tributaries, and wetlands located on this site and downstream of this site.

In Burnett's community survey of quoll sightings (See Map of Quoll Sightings), all quoll sightings were located within 1.5km of the tributaries of Oxley Creek and the Logan River (Norris Creek and Chambers Creek, Abrade Creek, Flagstone and Sandy Creek). The North Maclean site is located upstream of two tributaries that flow into the Logan River.

It is critical that habitat, habitat connectivity and safe fauna movement be preserved to retain the survival of the guoll and other species that contribute to local, regional and national biodiversity. This application should not be approved.

9) PRECAUTIONARY PRINCIPLE

Without long term and definitive studies, there is sufficient information from community sightings current to 2012 to confirm that

- Spotted tailed quolls are known to occur and have been observed by the community between, and around the North Maclean site now proposed for industrial development (as recorded by Burnett 2006 and subsequent surveys).
- Road kill specimens have been collected from Goodna- Springfield Rd near the Greenbank Military Training Area gate (on the south-west side) and one on the Mt Lindesay Highway near the

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Carter Rd intersection. One dead animal was found on Teviot Rd and another on the corner of Greenhill Rd and Crowson Lane.

- The quoll sightings collected date from 2000 to 2012, with the most recent sighting coming from Teviot Rd on 28 January 2012. There is also a 30 year old historical sighting from Scotts Lane.
- To date, it is unknown where this species is breeding, the size of the population, where the population is moving from, or where the population is moving to, or whether this proposed development will fragment a population of spotted tailed quoll or if the works will interrupt breeding.

Regardless of an absence of scientific studies (AS IN THIS CASE), the precautionary principle should be applied in this instance.

10) A report written to the Office of Urban Management in 2006 by Dr Scott Burnett (quoll biologist) stated that "the spatial extent, numerical size, movements, and residency status of the Spotted-tailed Quoll population in the Mt Lindesay North Beaudesert Study Area (MLNBSA) remains unknown. As such it is impossible to pin down the key habitats and movement areas used by Quolls in the area. In lieu of further data, the precautionary principle dictates that all remnant vegetation in the MLNBSA be viewed as potential Quoll habitat, and mitigation measures be implemented to protect it".

"Similarly, there is no specific information regarding linkages and movement corridors between the MLNBAS Quoll population and the nearest other Quoll populations in the Border Ranges and environs (the Greenbank-Border Ranges meta-population), to the south. Two such potential corridors can be inferred from aerial photography:

- (ii) one to the south-west from Greenbank Military Reserve through Spring Mountain, Flinders Peak, Teviot Range and thence into the Mt Barney/Border Ranges Quoll populations, and,
- (ii) another to the south-east from Greenbank Military Reserve through Mt Tamborine and thence to the Border Ranges/Lamington Plateau Quoll population.

The precautionary principle dictates that until targeted studies are undertaken, these corridors be considered essential inter-population linkages and actions taken to maintain them as such. (Burnett 2006)"

11) HABITAT LOSS

"Habitat loss is the single greatest threat to any wildlife species. Being at the top of the food chain, Spotted-tailed Quolls are particularly affected by habitat loss, both because of their large spatial requirements (i.e. about 500 – 1000ha per animal), and because of their dependence on a diverse and abundant mammalian prey community. Therefore even habitat change which results in nothing except the loss of tree hollows will affect Quolls through a decline in possum populations" (Burnett 2006).

The North Maclean site currently provides a movement corridor for species like the quoll and the development of this site will negatively impact on habitat connectivity to the north, south, east and west of this site. Habitat and corridor linkages to state bioregional corridors and local ecological corridors will be fragmented further and biodiversity values will continue to be degraded. LACA does

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not support the loss of habitat, fragmentation of habitat or loss of biodiversity assets at a local, regional or national level. This application should not be approved.

SIGNIFICANT IMPACT ASSESSMENT FOR QUOLLS – NORTH MACLEAN ENTERPRSE RECINCT

1. Assessment Criteria 1 – Will the action lead to long-term decrease in the size of an important population of a species?

- Habitat loss, habitat fragmentation, loss of foraging and dispersal corridors, increased
 risk of pest species and threats (e.g. cars, toads, domestic pets such as dogs). These
 impacts will contribute to a loss of population of quolls in the short to long term, a
 reduction in the breeding quoll population, and likely decline in the numbers of quolls in
 the short to long term, with the likelihood of this impact contributing to the local
 extinction of this endangered species in this region.
- Lack of long term and seasonal quoll and fauna surveys to currently know population size, population characteristics, population movement or degree of importance of quoll population is currently unknown
- It is therefore most likely that the action could lead to long term decline in population size and may have impacts on other populations in the broader region (eg genetic dispersal for biodiversity)
- The precautionary principle needs to be applied.

2. Assessment Criteria 2– Will the action reduce the area of occupancy of an important population of the species?

- Yes
- Lack of long term and seasonal surveys to currently know specific location of population and habitat usage, size of population, dispersal movements, or degree of importance of population
- The application states clearly that this development will remove 117 hectares of habitat on this site. This will cause short term and long term loss of habitat (for foraging, breeding, shelter, prey) and loss of habitat connectivity to surrounding habitat
- This proposed action will reduce the total habitat available on the site, in the local area
 of North Maclean and Munruben, and a loss of habitat for connectivity, movement
 corridors, foraging sites.

3. Assessment Criteria 3 – Will the action fragment an existing important population into 2 or more populations?

- A lack of long term and seasonal fauna and quoll surveys means there is a lack of knowledge about the population size, importance of the population, where quolls area moving from or dispersing to
- Without long term studies for quolls in the North Maclean site, North Maclean, Munruben, Greenbank, Chambers Flat and Greater Flagstone Area, it cannot be concluded that the fragmentation of an important or otherwise population of quolls will

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- occur. However, habitat clearing and increased risk of roadkill will definitely contribute to this outcome.
- The precautionary principle needs to be applied. Do not approve this application.

4. Assessment Criteria 4 – Will the action adversely affect habitat critical to survival of a species?

- In the absence of any long term studies and quoll surveys, it is unknown whether this habitat is critical to spotted tail quolls at North Maclean, or in this landscape or region.
- Community reported sightings of spotted tail quolls confirm that historically and recently, spotted tail quolls are known to utilise the area around the North Maclean site. This means that all habitat and habitat connectivity in the and around the North Maclean site and Greater Flagstone area is important for the future survival of the endangered spotted tail quoll.
- Habitat linkages and core habitat areas are critical and should be retained in this location, not developed. Habitat connectivity to adjacent creeks, the Logan River, state bioregional and local ecological corridors are also critical to preserve and buffer existing habitat and biodiverse locations.
- All habitat in the Greenbank area provides critical food sources, safe movement and dispersal and shelter to secure the long term survival of quolls in this area and SE Qld
- The action will continue to clear habitat and fragment movement corridors, allow pest species to invade and degrade habitat and increase threats for quolls(eg cars, toads, dogs)

5. Assessment Criteria 5 – Will the action disrupt the breeding cycle of an important population?

- However, without long term and seasonal surveys the population size, characteristics, population dynamics and importance of the quoll population at North Maclean and in the Greater Flagstone Area is unknown.
- The clearing of the vegetation at the North Maclean site will reduce habitat, increase habitat fragmentation and threats to quolls, reduce access to food sources, increase risk of road kill and increase introduced species that pose a threat to quolls (such as toads). All of these impacts will negatively impact on the survival of individual quolls in the population with negative consequences on the breeding population and long term survival of quolls.
- Because this species is endangered, the loss of any individual quolls will negatively impact on the breeding cycle of the spotted tail quoll, reduce genetic diversity and future resilience of the species
- 6. Assessment Criteria 6 Will the action modify, destroy, remove, or isolate or decrease the availability or quality of the habitat to the extent that the species is likely to decline?
 - The action will destroy, remove, fragment and decrease the availability and quality of the habitat at North Maclean and in the surrounding landscape, where it is currently an important habitat and stepping stone for many species. The action proposes industrial

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- development that will demand the possible widening of adjacent roads, further clearing of habitat and increasing the risk of road kill in the quoll population. .
- Habitat clearing on the site, will create a barrier to fauna movement (eg further loss of habitat, roads).
- Habitat connectivity across the proposed site and across the local landscape (north, south, east and west of the site) will be fragmented
- Loss of habitat and habitat connectivity will reduce the short and long term survival of the quoll.

7. Assessment Criteria 7 – Will the action result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat?

- Increased habitat clearing, habitat fragmentation and industrial development will increase the presence of invasive species, weeds and pests
- Small and narrow corridors of vegetation will be subject to edge effects and increased risk of introduced species and pests. The introduction of increased runoff and degraded water quality downstream from the proposed development will degrade the quality of habitat to the NE, S and SW of the site e.g. habitat east of the Mt Lindesay Highway around St Aldwyn Rd Degraded water quality and waterways.

8. Assessment Criteria 8 – Will the action introduce disease that may cause the species to decline?

 The action will result in the clearing of habitat, the loss of habitat connectivity on and around the site, reduce access to food sources and increase stress to native fauna like quolls. This will increase the risk of illness and disease to the quoll population in the North Maclean/Munruben area. These impacts will reduce the short term and long term survival of this species.

9. Assessment Criteria 9 – Will the action interfere substantially with the recovery of a species?

- For a federally endangered species like the spotted tail quoll, the loss of any individuals of the species is detrimental to the future recovery of the species, because of the breeding and genetic value of all individuals.
- There have been no long term or seasonal surveys of spotted tail quolls in North Maclean or the Mt Lindesay North Beaudesert Area. Consequently the population size, population characteristics, population movement patterns or importance of the population is unknown to date.
- A reduction in the population size would result in an increase risk of disease through inbreeding, or reduction in breeding potential where individual quolls are lost in the North Maclean area. An increased risk of disease and any decline in population size would reduce the genetic potential of any population and would threaten the long term survival of the spotted tail quoll.
- The action proposes habitat loss and will fragment habitat connectivity which will reduce the ability of quolls to disperse safely for breeding purposes or to establish new range areas.

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All habitat in the area of North Maclean, Munruben and Greenbank areas should be regarded as habitat for spotted tail quolls. All habitat is of value for supporting foraging of prey species for the quoll, den sites, shelter and as vegetated corridors for dispersal. All habitat adjacent to wetlands and waterways should be regarded as habitat for the spotted tail quoll.

12) The current application claims that the quoll sightings could be one random juvenile dispersing through the area. However, the numerous recent and historic sightings of quolls in this area as collected by the Queensland Museum and Dr Scott Burnett (University of Sunshine Coast) since before 2005, certainly provides evidence that refutes this statement. The application does not state in any way how direct or indirect short term and long impacts will be avoided or mitigated for the quoll. This application should not be approved.

There are no quoll surveys as part of any investigations for this property. In fact no wildlife surveys have been conducted at all on this property. These must be done and should be done BEFORE any approval is made by the Federal Government.

Fauna studies and environmental assessment should not be a condition AFTER the decision is made that is just too late and unacceptable to the community or to the preservation of federally listed species or any other species. This does not achieve the best outcomes which is the case with this current application.

The applicant has not undertaken any quoll survey or camera survelliance on the property. The current application plays down the significance of the quoll sightings in the immediate areas of North Maclean (believed to be the first spotted tail quoll sightings in the Greater Brisbane Area since the 1930s). In addition, it plays down the significance of the guoll sightings in the broader landscape. Quoll sightings have occurred in the north (Greenbank Military Training Area and Goodna- Rd, Middle Rd), in the east (sightings in Munruben , west and east of Mt Lindesay Highway)and Jerry's Downfall Reserve (east of Mt Lindesay Highway south of Granger Rd and north of Chambers Flat Rd), as well as on Chambers Flat Rd. All sightings in the area from Spring Mountain to Logan Reserve are within 150 metres of waterways including but not limited to the Logan River, Chambers Creek, Oxley Creek, Crewes Creek, Norris Creek. Logan City Council overlay mapping for wetlands and waterways identify wetlands in the north east and south west areas within and adjacent to this property.

There is **no information available** to date to suggest where the quolls are coming from in the local or regional landscape, or where they are going to. There is no information to confirm or deny the significance of the quoll sightings in the vicinty of Munruben and North Maclean, or how these sightings may or may not be of significance to other guoll sightings across the landscape at Spring Mt. Greenbank, Park Ridge South, Chambers Flat, Logan Reserve. However, there are confirmed quoll deaths from road kill on the corner of Greenhill Rd and Crowson Lane, Teviot Rd, Mt Lindesay Highway (south of old Carter Rd intersection) , Goodna- Springfield Rd. Two of these specimens were taken to the Queensland Museum and are now a part of the collection.

13) Habitat clearing and road kill are threats to quolls, koalas and other fauna species. These impacts are certainly both evident in the area now. Both habitat clearing and increased vehicle movements are proposed in the current application for North Maclean Enterprise Precinct, which will increase impacts on fauna very significantly in the short and long term. The applicant has made no reference at all to wildlife road kill issues in the local area that will most likely increase if this property was to be developed, vegetation removed with increased motor vehicle traffic and heavy vehicle traffic. For example, if this property is developed for industry, then Crowson Lane will need to be increased to 4 lanes (from 2 lanes), Greenbank Rd and Scotts Lane will also be increased from 2 to 4 lanes wide. Roadkill along Crowson Lane (since the construction of the Crowson Lane/ Chambers Flat Rd roundabout)and Greenbank Rd (since the habitat clearing and road works for the service station/truck depot on the corner of Mt Lindesay Highway and Greenbank Rd) have resulted in increased road

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kill of fauna e.g. Crowson Lane by 6-7 times. Thus, any future industrial development will result in cleared habitat and increased vehicular traffic (cars and haevy vehicles) which will increase fauna injuries, and deaths eg quolls, koalas, eastern grey kanagaroos, red neck wallabies.

Road kill issues for this site include ,but are not limited to -

- inappropriate road designs that do not accommodate fauna movement solutions from the design stage (e.g. bridge not culverts have better outcomes, glider poles,possum ladders fauna bridges over roads, koala fencing must be compulsory in this region,
- road speeds Australian road design standards for road of a certain driving speed take preference for being designed for public safety, not fauna movement and reducing short and long term impacts on fauna. This has been the case with recent upgrade works on the Mt Lindesay Highway by Main Roads and their contractors since 2005 from Browns Plains to Chambers Flat Rd. the community requested better outcomes for fauna movement, economic costs were argued by main Roads to explain that this could not be done (eg bridge for Chamber Creek), road speed for Mt Lindesay Highway,
- road speeds and designs by LCC local government links main roads with local roads. Upgrades of
 local roads also have impacts on fauna movement, roadkill and fauna injury (koalas, kangaroos, red
 neck wallabies, quolls). Requests by LACA and local community residents for Logan City Council to
 reduce road speed along Crowson Lane and east and west service lanes to Mt Lindesay Highway (
 south of Stoney Camp Rd and Granger Rd to Chambers Flat Rd and Crowson Lane) have been mostly
 ignored. LCC arguments to keep road speed the same have included that the road has been designed
 for that speed.
- Roadkill is a short term and long term impact, it is both direct and indirect in its impacts. All traffic
 movement corridors being utilitised by any future heavy vehicles and motor vehicles associated with this
 site will have these impacts, many beyond the immediate roads around the North Maclean site.
- Please check data records of Wildnet, local Wildlife carers, Brisbane Area Rescue Network, local vet clinics in this area, Logan City council has a service that collects roadkill so they can record this.
- Main Roads Nerang lack of fauna fencing and fauna movement design solutions and fauna friendly design features in the Mt Lindesay Highway area since before 2005 but also Waterford-Tamborine Rd as well for this region. It is critical that this must occur now. Retrofitting of Chambers Creek (between Munruben and Park Ridge South) crossing to bridge span is needed for rectifying ecological corridor links for Chambers Creek (Jerry's Downfall area). There is an incomplete fauna underpass under the highway that will not be completed until the upgrade of the main part of the highway a bridge span must be included at this location for the main upgrade of the highway the width of the highway at this point is 120 metres wide.
- The above matters must be taken into account in relation to this current application

This current application has given little to no serious consideration of potential direct or indirect effects of this proposed development on quolls or other federally endangered species. A 73 hectare Offset proposed (mostly for koalas) at Somerset will not avoid, mitigate or prevent the very real and extremely negative short and long term, direct and indirect impacts in the local area of North Maclean or across the broader landscape of this region. This is unacceptable and the proposal should not be approved.

14). KOALAS (FEDERALLY VUNERABLE)

Koalas are federally listed as a Vunerable species. The application states there were 149 koala sightings within 5 km of the property.

MAP 2 – Koala Sightings in Logan (DERM Wildnet Data current to Nov 2011)

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The numerous koala sightings are confirmed in the Wildnet records for the North Maclean area. Few people report their sightings. These sightings represent incomplete information for koalas in this area of the North Maclean site proposed for industry.

Since November 2010, there has been a greater rainfall in the area and there has been an increase in koala sightings being reported by some local residents. However, not everyone reports their sightings of koalas or other wildlife. Some recent sightings since 2011 include -

NORTH

- Stanley Court annual or twice annual koala sightings on the northern end (bordering Wearings Reserve) – current to 2014
- Due South of intersection of Stanley Court and Crowson Lane on NE corner of the Wearco development site inside the fauna fencing (January 2015) – a female koala and joey were seen – this clearly indicates a breeding population of koalas on the North Maclean site.
- One live koala sighting of a koala crossing the roundabout at Crowson Lane and Stanley Court
- Janelle Court, (more than one sighting of koala each year for the last 5 years)
- on Wearco property south of the roundabout of Stanley Court and Crowson Lane, on the service lane located on the west side of Mt Lindesay Highway (Sept 2012)
- 23 Appaloosa Court (corner of Crowson Lane) one koala observed 2014, previous sightings of koalas on this property (few trees on this property)
- 129 Crowson lane (Riding for Disabled Property) live sighting of koala in 2014
- 129 Crowson Lane local resident reported koala crossing from north of Crowson lane to South of Crowson lane at 7 pm at night in 2014, previous sighting of a koala at this similar location on road verge on south side of Crowson lane waiting to cross to north side of road
- 142 Crowson lane (inside property fenceline) one sick koala 2014
- 267-283 Crowson lane live koala sighting in Sept 2012, this is a Land for Wildlife property (LCC) and is now a Koala Nature Refuge (Qld Govt) and trees have been planted on this property for koalas.
- When the Mt Lindesay and Crowson lane intersection for the Main Roads overpass for Chambers Flat Rd and Crowson lane commenced clearing of vegetation in March 2011, there were 3 koalas sighted within 5 days at this location alone.
- Historical sightings of people reporting having stopped to allow koalas to move across the road on NE of intersection of Crowson Lane and further west along Crowson lane.

WEST

- West side of Greenbank Rd opposite the intersection with Andalusian Drive,
- Koala sightings west of Greenbank Rd (between Greenbank Rd and Phillipa Court)

SOUTH

- Beryl Parade (south of Scotts Lane).
- South of Scotts Lane (between Scotts Lane and Logan River)

This application does not meet the Federal government koala offset criteria of direct offsets for 90% of the development. The applicant proposes to 'Offset' the clearing of 117 hectares with land to be purchased possibly in Somerset Regional Council with regrowth vegetation of less than 10 years . This proposal is ludicrous and will in no way AVOID impacts on the koala. EPBC requirements and Queensland Govt koala policy and guidelines state that avoidance should occur in the first instance,

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followed by mitigation. Offsets should be a last resort, not an easy way out for developers. The current Offset proposal is not acceptable.

PHOTO 1 - 22 Janelle Court - resident has multiple koala sightings each year and consistently for at least 5-6 years.

PHOTO 2 - A mother and joey koala – evidence of a breeding koala population is located on the North Maclean site – this location is due south of intersection of Stanley Court and Crowson Lane in tree about 5 metres behind fauna fencing in January 2015. This pair remained in the same location for at least 2 weeks, using the same tree on and off over the 2 week period.

PHOTO 3 - 23 Appaloosa Court Sept – Oct 2014 – the resident has previously had 3 koalas on his property about 10 years ago. He has seen a koala cross from the north side to the south side of Crowson Lane. Other residents have seen koalas cross from the south side of Crowson Lane to the North side. Crowson lane is the immediate north boundary to the North Maclean Wearco site.

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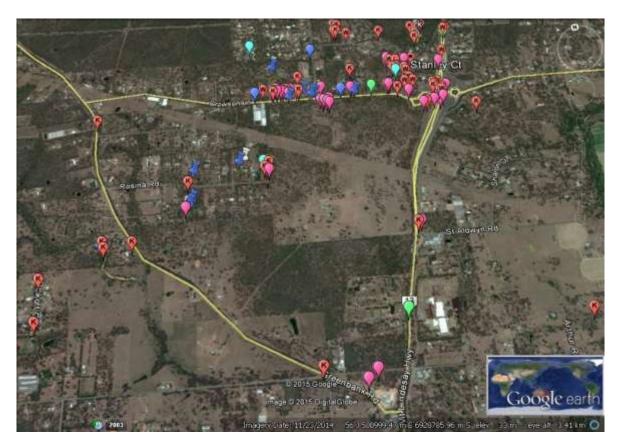
The applicant clearly states in the application (Part 1 p 1-40) that no other sites have been considered for this industrial development. Residents have asked this question since 2005, with no response from any level of local or state government.

The applicant clearly states that it is their intention to take action that will certainly have significant negative short term, long term, direct and indirect impacts on koalas in this area. Their proposed action will likely contribute to

- A loss of habitat at the locality within North Maclean (Logan City Council area)
- A loss of food source (locally and regionally)
- An increased risk of disease (locally and regionally)
- A decline in koala population (locally and regionally)
- A decline in healthy breeding population
- Reduced resilience of the species (locally and regionally)
- The loss of safe habitat areas for dispersal of koalas thorough the landscape which will increase the risk
 to koalas of road kill and dog attacks (contact Dept Environment and Heritage Protection and Moggil
 Koala Hospital for current Wildnet data in relation to road deaths, disease, and sightings of koalas in this
 region. Contact LCC for resident reported sightings. Check Australian Koala foundation website, LACA
 koala records from community sightings.
- Increased Road kill risk Increased heavy vehicles (freight transport and delivery vehicles) and motor
 vehicles (employees, customers) associated with the proposed development will create very real and
 significant short and long term threats for koalas in the local area and across the region of movement for
 these heavy vehicles and cars.
- Reduced survival of a healthy koala population in the short term and long term
- Reduced resilience of the koala species in this area (locally and within SEQId)
- Loss of native habitat for returning rehabilitated injured and sick koalas back into their local habitat (
 must be within 1.5 2 km of where the koala is currently found). If this does not occur that koala may be
 euthanased.

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Map 2 - Fauna Road kill and Live Koala sightings - Norris Creek to Scotts Lane at North Maclean

Map 2 shows fauna road kill data that has been collected by local residents in the area, particularly along the Crowson Lane . There are also live sightings of koalas (see red marker with K) on the map.

> MAP LEGEND Red marker with K - Koalas Red marker with W - red neck wallaby Red marker with L - Lace monitor White pin- Flying Fox Pink marker – Eastern Grey Kangaroo Blue and Green – brushtail and ringtail possums Aqua – gliders (sugar, feathertail, yellow bellied) Blue pin – Glossy Black cockatoos Yellow pin – spotted tail quoll (not all marked) – refer to Dr Scott Burnett's map White marker - pheasant coucal

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Many of these sightings for eastern grey kangaroos, red neck wallabies indicate road kill since 2005 . There has been an increase in road kill in kangaroos and wallabies especially along Crowson Lane, especially since the completion of the Crowson Lane /Chambers flat overpass in 2012. Local road users and residents know regular locations for roadkill which match north - south fauna movement along Crowson Lane. These movements have varied little in the 24 years that one of our members have lived in Stanley Court for. Koalas are vulnerable, the increased risk of road kill places a greater risk on koalas as well as other native species. Since habitat clearing

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for a truck depot / service station on the corner of Greenbank Rd and Mt Lindesay Highway, local residents reported an increase in the deaths of kangaroos along Greenbank RD.

Particular issues for koalas include but are not limited to -

- No Koala surveys have ever been conducted in this western area of Logan City Council that was previously Beaudesert Shire Council (before Jan 2008).
- The community has repeatedly asked LCC to fund koala surveys
- LCC has only recently started a community koala sightings weekend in Oct each year (this has a history where community and LACA have requested and assisted with this). Few sightings are reported on this weekend.
- In a community survey, residents informed LCC that they believed that more needed to be done to help and protect for the koala in LCC.
- Many people may see koalas but never report their sightings. Thus, Reported sightings under represent the real number of koala sightings in this area around North Maclean site.
- A lack of fauna surveys and studies which have fed into bad planning decisions over many years in the Scenic Rim Regional council area, Logan city Council, Qld State Government e.g. Mt Lindesay North Beaudesert Investigation and subsequent years of consultation with a lack of environmental data or on ground field assessment before areas were identified for future development
- Loss of koala habitat increases time on ground and increases risks of road kill and predation by dogs
- Lack of fauna design features e.g. Mt Lindesay Highway and Crowson lane upgrades lack of fauna fencing (Main Roads claimed they did not have the funds for this and that the highway posed difficulties for fauna fencing)
- Road speeds along Mt Lindesay Highway, on service lanes to highway, Chambers Flat Rd, Scotts Lane, Crowson Lane, Greenbank Rd, Teviot Rd
- Lack of signage in areas where there are known large numbers of fauna crossing e.g. Crowson lane (near Stanley Court intersection), Crowson lane on crest of road between Greenhill Rd and Andalusian Drive), Greenbank Rd between Crowson Lane and dip of Greenbank Rd (over Logan River tributary) where known koala sightings have observed koalas on edge of Greenbank Rd in trees on road verge
- Along Greenbank Rd, especially on crest of hill west of intersection of Greenbank Rd and Scotts lane moving west towards dip in Greenbank Rd (over tributary to Logan River)
- The koalas at North Maclean, Munruben and Greenbank, need their habitat protected in that area not in Somerset which is proposed in the Offsets.

The proposed development will have a significant impact on the local extinction of the koalas through the removal of stepping stones, loss of connected habitat, shelter and food resources critical for breeding and survival. Increased heavy vehicles and motor vehicles associated with the proposed development will create very real and significant threats for koalas in the local area and across the region of movement for these heavy vehicles and cars. These actions will be replicated throughout the Greater Flagstone Area where extensive areas will be cleared of koala habitat, for intensive urban development and the transport, power, water, sewerage infrastructure that will be provided resulting in additional habitat clearing and fragmentation.

LACA cannot support this proposed action and I request the NON APPROVAL of this proposed industrial area.

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15) OFFSET CONCERNS

LACA does not recommend the approval of this proposed application for development of industry at North Maclean.

LACA does not endorse offsets. LACA does not believe that offsets will provide a net gain in relation to this proposed action. The clearing of an extensive site (117 hectares) is a huge loss to the environment, endangered species and the community of Noth Maclean and Munruben. Offsets will not assist the koalas of North Maclean and Munruben, offsets will not prevent road kill of koalas and quolls in this local area.

However, this application has grossly underestimated offsets in terms of -

- The current offset proposal does not consider spotted tail quolls, or any other species that have not been surveyed and commented on in this application.
- The current offset proposes a \$65 000 study to identify a site to purchase as a 73 hectare offset with regrowth under 10 years of age this is not acceptable
- This application does not meet the Federal government koala offset criteria of direct offsets for 90% of the development.
- LACA believes that the current offset estimate is completely underestimated.
- <u>Direct and indirect impacts on quolls, koalas, grey headed flying foxes and the swift parrot need</u> to be included in this calculation
- Offsets in Somerset do nothing for protecting the unique biodiversity in the North Maclean.

 Greenbank, Munruben area this has been a large issue for the community and environmental groups since 2005, who have been seeking better outcomes to bad planning decisions that have been made since before 2005.
- LACA and community see this EPBC Referral comment period as the LAST CHANCE to get the right outcomes for the environment and community which have been denied for more than 10 years by the developer, local and state governments
- On ground fauna assessments have not been done. Other cases in Flagstone where habitat has been cleared for development revealed a "higher koala population than was first though" (Mr Jim McDonnell retired Environment Manager for Logan City Council).
- This offset package does nothing for sick and injured wildlife
- This offset parkage will not allow rehabilitated koalas to return to the local area of North Maclean and Munruben (need to be returned within 1.5 2 km) of where they are found. If no habitat exists then there is a greater risk that the koala will be euthanased.
- A variety of tree species will be lost, the offset may not provide for this same variety of species to be protected.
- The application makes reference to the vegetation to be acquired as an offset, will have a covenant for 20 years, the length of the impact. As outlined in this submission, the impacts will continue beyond this time period. Offsets would then need to continue beyond this time period.
- The Vegetation Management Act will not protect the offset area after 20 years maturity, a permanent convenant would need to be placed on the offset asset to keep it in tact in perpetuity and not subject to clearing for roads, road widening or any infrastructure projects eg powerlines, water pipelines, gas pipelines.
- Offsets will need to be provided at all stages of this proposed development, not just in stage one as indicated in the application.

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16). GLOSSY BLACK COCKATOOS (VULNERABLE QLD NCA)

Glossy black cockatoos (Vulnerable in Queensland) are known to occur in the North Maclean, Munruben, Greenbank, Chambers Flat Rd area. Glossy black cockatoos have been sighted -

- 2 live birds feeding in Allocasuarinas south of Crowson Lane in NW part of the proposed development site (opposite the intersection with Greenhill Rd and Crowson Lane, opposite the Logan City council Depot on the corner of Greenhill Rd and Crowson Lane)
- 3 live birds observed on the proposed development site, immediately south of 71 79 Crowson lane.
- 1 live bird feeding on the NE corner of the Logan City council Depot site on the corner of Greenhill Rd and Crowson lane
- Other sightings south of Scotts Lane

PHOTO 4 - A pair of Glossy black cockatoos eating cones on Wearco property opposite 129 Crowson Lane in Sept 2009

PHOTO 5 - A female Glossy Black cockatoo on NE corner of Greenhill Rd LCC depot (on corner of Crowson Lane)

These birds are highly specialised feeders, eating only cones from Allocasuarinas. They require extensive areas of habitat because the seed cones are not all able to be eaten every year and in every tree by the glossy black cockatoo. The birds must consume large amounts of their cones and they are slow breeders. Some Glossy black cockatoos are known to nest in the same hollows and trees year after year. This is why it is especially critical to protect stag trees and trees with hollows. Offsets under 10 years of age at Somerset will do nothing to protect the survival of the glossy black cockatoo at this location at North Maclean. The current application has no surveys for glossy black cockatoos, and there has been no mapping of *Allocasuarina littoralis* vegetation present on the site (eg on NE and NW corner of site along Crowson Lane, and other locations on the property). However, community sightings confirm the property and local area is known to provide habitat for glossy black cockatoos. Other local residents in Munruben, North Maclean Greenbank, Chambers Flat report sightings of glossy black cockatoos. A verbal conversation with Mr Geoff Wearing (Senior) in 2005 confirmed that he had observed "glossy black cockatoos flying over the property every year for many years" and that the red colour of tail feathers was a distinctive distinguishing feature.

There is no recovery plan for Glossy Black cockatoos in Queensland, however, there is a **South Australian Glossy Black Cockatoo Recovery Plan**, which could be used as a guideline for greater protection of the species in this location in Queensland (subject to adapting this to Queensland habitat conditions) . http://www.environment.gov.au/system/files/resources/eba7ed3d-80fa-4519-b39e-f1cff0dc71d2/files/clathami-halmaturinus.pdf

http://www.environment.gov.au/resource/south-australian-subspecies-glossy-black-cockatoo-calyptorhynchus-lathami-halmaturinus

17). GREY HEADED FLYING FOX (FEDERALLY ENDANGERED)

Federally endangered Grey headed flying fox are also associated with this habitat. No surveys have been conducted of the local area or its population of this species.

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Habitat clearing in the Flagstone area about 2-3 years ago resulted in the local community reporting birds and flying foxes dead on the ground (loss of habitat and warm temperatures).

18). FROG AND REPTILE SPECIES SURVEY

No frog or reptile surveys have been conducted - yet wetlands and waterways occur on this property (Logan City Council Wetlands and Waterways planning overlay). In 2011, HLA conducted fauna surveys and identified several frog species in a HLA report for Main Roads. This report focused only on the immediate linear corridors along the Mt Lindesay Highway, Norris Creek and Chambers Creek (flows through Jerry's Downfall Reserve which is a conservation area) in this local area. Frog and reptile surveys still need to be conducted. Areas along Norris Creek have been associated with essential habitat for the Wallum Froglet, and the green thighed frog has been identified from the Greenbank and Chambers Flat/ Marsden areas.

19). NO DRAFT OF FINAL PLAN FOR PUBLIC CONSULTATION

It is very concerning that there is no draft final plan or layout for the industrial area that is ready for this public comment stage. The application states that the site plan is subject to change. It is unacceptable that the community is being asked to comment on this proposal when there are no draft final plan to comment on during this consultation period. This is unacceptable and continues the uncertainty that the community has experiences for 10 years so far.

This is not the first time the community has had to comment on a planning document for the North Maclean Industrial Area or the Greater Flagstone Area, where background documents and planning, or research studies have not been provided for the community at the time of the public comment period. This application should not be approved until a final draft plan has been provided for community comment in relation to the environmental and social impacts.

20). NO DRAFT OF FINAL PLAN FOR STORMWATER IMPACTS ON SITE

There is no finalised stormwater plan, but the legal points of discharge will flow NE (through neighboring private property and directly into the Logan River), south (to neighbouring private property with Melaleuca irbyana), to south-west (to flow via a tributary through private property into the Logan River). It is highly objectionable to the community that industrial waster water flow (a) onto private property which relies on tank water and other natural water sources, (b) that the industrial waste water be discharged into tributaries that flow directly into the Logan River. These actions will not improve the condition of water quality or vegetation in the Logan River and is not preferable for human health reasons. This is an unacceptable risk to the environment and community health.

21).NO BUFFERS BETWEEN EXISTING RURAL RESIDENTIAL COMMUNITY AND PROPOSED INDUSTRY

There is no reference to in the current application to any buffers planned between the proposed industrial development and the existing for the community. Buffers to existing communities, and transitioning land use between existing communities and new developments are currently State Government policy and were also commented on in changes made to the Greater Flagstone Area. Since 2005, the community has requested that this proposal be removed completely, and hence should not be approved. There is no reference at all in the current application to any plans that will avoid negative impacts on the community (eq air, water, noise, odour, operational hours, traffic and reduced public safety with increased traffic impacts in an existing rural residential community, crime in industrial areas, security alarms, beeping trucks lighting issues at night time from industrial areas in a rural residential area where residents value their night sky views).

22). LACK OF CONSULTATION

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Since before 1996, there has historically been a lack of genuine consultation by local and state government with the community. The community of Greenbank, Munruben and North Maclean has been denied the right to say no to this development since the OUM proposed it on mapping in 2005 as part of the SEQRP Mt Lindesay North Beaudesert Study Area.

Every stage of local government and state government planning has used different terminology that has confused the community e.g. North Maclean Enterprise Precinct for an industrial area, Mt Lindesay North Beaduesert Study Area (2005), where North Maclean Industry and Flagstone were two separate urban developments, then Greater Flagstone (2010) where suddenly North Maclean was added to the 'Greater Flagstone Area'. Many people in the community were not aware that this was an opportunity to comment on North Maclean Industry at this time.

The majority of the community feel that the planning documents that they have had to comment on over the past 10 years have included

- planning jargon that discriminates against the average person. Over this 10 years period, I have had many conversations with people about: "where do I start", "the document is not easy to understand"
- many people do not have access to computers in their daily lives for many reasons (eg age, lack of skills, socio-economic circumstances, cost of technology), however all levels of government incorrectly assume that this method is used by everyone today. This is not the case and is of the reasons why the LACA Vice President Kathy Faldt requested that a hard copy of the current application be made available in the local Jimboomba Library. Over 10 years, I have printed documents for people who have no computer access, are elderly and don't use a computer, are house bound and cannot seek a hard copy from other places easily.

When planning by local and state government has occurred, there has never been any specific consultation for the community to just focus on the North Maclean Enterprise Precinct, to be engaged with discussing their concerns and their ideas for how they would like to see their local area developed or planned for the future - this certainly did not happen before the appearance of the 1996 Beaudesert Strategic Plan where it first referred to " a possible industrial area at Maclean". The community has never had the right to say 'no ' to this proposal despite 10 years of the community clearly opposing this and providing information about their concerns and their wish for the North Maclean Industrial Area to be completely removed from the planning documents.

At each stage of any local and state planning in the last 10 years, the community has been told, there will be more detailed documents and " context maps" at the next stage of planning, or that specific consultation for North Maclean will occur at the next stage. The detailed documents and mapping has never occurred. This current process is yet another example of this with no final plans for the community to comment on. Background documents for previous local and state government planning since 2005 have all excluded some or all background documents so that the community could not scrutinise or comment on these documents and reports e.g. Beaudesert Shire Council Whole of Shire Planning - background reports were not provided to the community for many years after as the community was told these documents were " commercial in confidence". Background documents for Greater Flagstone were also not made available to the community (the community was told that these were 'commercial in confidence').

23). INDUSTRY NOT COMPATIBLE IN AN EXISTING RURAL RESIDENTIAL AREA

The area of Munruben, Greenbank and North Maclean is a rural residential area. People have chosen to live in these areas for a rural residential lifestyle – people did not chose to live near a 117 hectare + industrial area. Many local people are rightly concerned about the future loss of economic value of their property and homes if the North Maclean Enterprise Precinct is approved. Some of these people have lived in the local area for over 30 years and may be getting ready to retire. There is no reference to this social or economic impact.

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There are many long term residents who have lived in the area for 20+ years. These residents have communicated that they moved to this area for the rural character, the trees, the wildlife (kangaroos, koalas, wallabies), some residents have moved to the area for health related reasons (e.g. stress, anxiety, depression). These residents value the rural residential scenic views that they get from their local view sheds e.g. bushland views looking south from Crowson Lane, bushland views looking west from the Mt Lindesay Highway (local and tourists), views to Mt Tamborine from the east end of Andulusian Drive (immediately west of the applicant's property). They also value the clean air and water that they have received up until now.

Many families in the local area host home stay students from Hills International College or have friends and relatives from overseas who visit them e.g. United Kingdom, USA, Japanese, Chinese, Vietnamese. This area will not attract people to live in or visit the area if it has an industrial area here.

The natural values and unique Australian wildlife and vegetation will decline significantly, resulting in lost future opportunities for tourism and ecotourism which the LCC has been trying to increase in the council area. This development will also deny future generations the right to seek employment opportunities and land uses that aim to protect our unique flora and fauna.

In 1996, a study *Koalas and Tourism : An Economic Evaluation*, was conducted for the Australian Koala Foundation to determine the economic value of koalas to Australia at \$1.1 billion dollars (the equivalent of 9 000 jobs). This figure from 1996 would have significantly increased since then, and the value added economic earnings from tourism activities would be considerable. Currently the LCC has a small number of people employed in tourism at 2 750 (ABS 2013-2014 *Tourism Satellite Account*), however LCC has communicated their intention is to increase this employment sector in the future. On p 2 of the LCC Tourism Strategy there is a picture of a koala, but not a koala in a wild setting – it is a koala at the Daisy Hill Koala Centre. The experience of seeing a koala in the wild is very different to that in a zoo. How much will this experience be worth in the future? How many jobs would it provide in the future?

http://www.visitlogan.com.au/ data/assets/pdf file/0016/128005/TourismStrategySummary small.pdf

The North Maclean area is close to Brisbane and to the new urban areas planned for LCC, which makes it a prime location for the promotion of ecotourism ventures and tourism associated with protecting and valuing the native Australian species already associated with this site.

https://www.savethekoala.com/our-work/koala-worth-11-billion-9000-jobs

- 24). In late 2005 early 2006 a local community group called the North Beaudesert Shire Action Group conducted a survey of approximately 1000 1100 people 89% of people surveyed did not support the North Maclean Industrial Area. These surveys were held at the local Jimboomba markets, the IGA shopping centre at Greenbank and Olly's shops at North Maclean. A mix of local residents and broader community were surveyed.
- 25). Historical documents confirm that in November 2007 (prior to the local council amalgamations) Beaudesert Shire councillors voted against the North Maclean Industrial Area stating "it was no longer needed". This is minuted in council minutes and was passed at a full council. After the council amalgamations (part of the old Beaudesert shire went to Logan City Council) and council elections occurred in March 2008. The new Logan City Councillors voted in support of the plans from Beaudesert Shire Council in April 2008, and these plans included the North Maclean Industrial Area. North Maclean Enterprise Precinct was never removed, despite written letters from the Beaudesert Shire council to the Office of Urban Management requesting this.

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- 26). The applicant claims several times in this current proposal, that the community has been consulted with " extensively". This is certainly not true or accurate. The community of Munruben and North Maclean and Greenbank are aware that this is not the case.
- 27). No background report for North Maclean that identifies a needs case has ever been presented to the community e.g. in 2005. There has never been any investigation of any alternate sites for industry for Greater Flagstone Area, despite the community requesting this many times in 2005. Under the SEQRP, the QLD State Government has a policy for locating employment with the new communities, however this is not the case with Greater Flagstone and North Maclean. Any new employment areas for Greater Flagstone should be located in the area that has always been identified as Flagstone ie the part of Greater Flagstone that is located further to the south-west and which is located closer to the interstate rail line and proposed local train line.
- 29). The application refers to Main Roads as the organisation that will be responsbile for any new roads. I have meet with Main Roads since 2006 in relation to upgrade works along the Mt Lindesay Highway. At every stage from Green Rd to Chamber's Flat Rd, Main Roads has been lax in their environmental duty of care. The community (including myself as a member of the Logan and Albert Conservation Association) had to continuously argue for fauna fencing, fauna movement solutions, and despite the community raising very valid environmental concerns, Main Roads persisted with a very out of date attitude towards road planning and road design. Main Roads used financial reasons as one excuse for why they could not afford to put fauna fencing along the Mt Lindesay Highway at Chambers Creek in Park Ridge South, and challenged the cost of a future bridge crossing for Norris Creek - when their own research indicates that bridges are the best outcomes for fauna (eg 2 metre high kangaroos).

As you can see this proposal has a very long history. LACA is one of the few groups that has been following this matter and taking time to write submissions, talk with local and state government offices and politicians about this matter, LACA has actively engaged in this matter for over 10 years. The local and state government have withheld information from the public since before 2005 and this still continues today. This treatment of the community and environment in the North Maclean, Munruben and Greenbank Area is unacceptable.

LACA requests that the proposed North Maclean Enterprise Precinct is not approved for environmental and social negative impact reasons. It should be completely removed from all planning documents (local, state or federal). It is appaling and unbelievable that this proposal has reached this stage with repeated deception and lack of information from the applicant as well as local (Beaudesert Shire Council, Logan City Council) and State government (Labour and LNP) for more than 10 years.

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Submission to the MLNBSA study Identifying and mitigating against impacts on populations of the

Endangered Spotted-tailed Quoll in the MLNBSA

12th April 2006

Dr. Scott Burnett (Quoll biologist)

Wildlife Projects Officer

Wildlife Preservation Society of Queensland

1. Summary

- I. It is now known (since June 2005) that a population of the Endangered Spotted-tailed Quoll occurs within the MLNBSA.
- II. In lieu of further data, the precautionary principle dictates that all remnant vegetation in the MLNBSA be viewed as potential Quoll habitat, and mitigation measures implemented as such.
- III. The precautionary principle dictates that until targeted studies are undertaken, the Greenbank Spring Mountain /Teviot Range Border Ranges corridor, and the Greenbank Tamborine-Border Ranges corridor be considered essential inter-population linkages for Quolls, and actions taken to maintain them as such.
- IV. Regional planning instruments provide grounds for classifying remnant vegetation within the MLNBSA as Essential Habitat for Spotted-tailed Quoll, by the EPA.
- V. The North Beaudesert OUM Plan proposes to replace large areas of native vegetation (and potential Quoll habitat) with housing estates, enterprise precincts and linear service infrastructure.
- VI. The North Beaudesert OUM Plan will cause fragmentation of potential inter-population linkages identified above (III). Fragmentation of the MLNBSA Quoll population, and the hypothetical Border Ranges-Greenbank meta-population, will result from clearing, development and subsequent impermeability of housing estates, enterprise precincts and linear service infrastructure to movements by Quolls.
- VII. State, Regional and Local Bioregional corridors in the MLNBSA must be re-evaluated, including the addition for Norris Creek to Greenbank to Greenbank Military Training Area, and a corridor along Chambers Ck.

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- VIII. A direct result of increased business and residential populations will be increases in traffic and of road infrastructure. This will create a major and probably unsustainable mortality sink for Spotted-tailed Quolls in the area, which are expected to be killed on the areas roads at ever increasing rates as the area develops.
 - IX. A direct result of proposed urban communities in Park Ridge, Boronia Heights, Greenbank Central, New Beith, Flagstone and Undullah will be larger numbers of dogs in the area. Even when contained in backyards, this will result in an increased kill rate of Quolls. Our surveys to date suggest that backyards in the region are regularly visited by Quolls.
 - X. It is likely that increases in the residential/bushland edge will result in an increase in wild dog incidents and calls for council control of wild dogs in adjacent natural areas, especially in the Flagstone/Undullah area. Control by 1080-baiting is likely to be sought and may impact on Quoll populations.
 - XI. An increase in the number of householders in the area, and our documentation of Quolls visiting local backyards here, suggest that interactions between Quolls and humans will increase. We would therefore also expect the incidence of hostile interactions to increase.
- XII. Constraints mapping needs to be rerun using information on Quolls already collated by the community, and including any subsequent information collated as a result of further Quoll studies conducted within the MLNBSA.
- XIII. As a general consideration, and in lieu of further data, provisions must be made to maintain current areas of remnant vegetation as open space (conservation) areas, and to maintain and enhance existing wildlife corridors.
- XIV. A comprehensive regional survey of Spotted-tailed Quoll populations within and adjacent to the MLNBSA and Quoll management plan are required in order to adequately address concerns regarding impacts of the North Beaudesert Plan on Spotted-tailed Quoll populations. These must be undertaken prior to any further planning or on-ground works are undertaken.

2. Background

The Spotted-tailed Quoll *Dasyurus maculatus* is a carnivorous marsupial of the family Dasyuridae. It is the largest surviving marsupial carnivore on mainland Australia, and as such plays an integral role in ecosystem processes. Like most top order carnivores the species is also particularly prone to localized extinction due to habitat disturbance, direct persecution and indirect affects.

Not surprisingly then, Spotted-tailed Quolls are classed as Vulnerable, Threatened or Endangered in all mainland Australian states in which they occur (i.e. South Australia, Victoria, New South Wales and Queensland). The species is classed as Vulnerable in south-east Queensland under the provisions of the *Queensland Nature Conservation (Wildlife) Act 1992*. The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, lists the species as Endangered.

3. MLNBSA as Quoll habitat

Until June 2005, the Spotted-tailed Quoll was thought to be extinct in the Greater Brisbane area. Quolls had not been known from the area since 1956.

On 5th July 2004, Munruben local Ivell Whyte picked up a roadkilled Spotted-tailed Quoll on the Centenary Highway off-ramp at Carole Park. At the time, experts assumed that this animal was most likely a stow-away which had hitched a ride on a vehicle coming in from the Granite Belt or Border Ranges area. However, on the 21/6/05, Ivell Whyte picked up another roadkill, this time from the Mt Lindesay Highway in Munruben. This second roadkill (which now resides in the Queensland Museum), indicated that there was a population of Quolls in the district. This prompted a survey amongst the local community which, over a three month period from January-April 2006, resulted in a total of 22 contemporary Quoll sightings being collated from the Mt Lindesay North Beaudesert Study Area (MLNBSA) (see Attachments A and B).

The spatial extent, numerical size, movements, and residency status of the Spotted-tailed Quoll population in the MLNBSA remains unknown. As such it is impossible to pin down the key habitats

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and movement areas used by Quolls in the area. In lieu of further data, the precautionary principle dictates that all remnant vegetation in the MLNBSA be viewed as potential Quoll habitat, and mitigation measures be implemented to protect it.

Similarly, there is no specific information regarding linkages and movement corridors between the MLNBAS Quoll population and the nearest other Quoll populations in the Border Ranges and environs (the Greenbank-Border Ranges meta-population), to the south. Two such potential corridors can be inferred from aerial photography:

- (i) one to the south-west from Greenbank Military Reserve through Spring Mountain, Flinders Peak, Teviot Range and thence into the Mt Barney/Border Ranges Quoll populations, and,
- (ii) another to the south-east from Greenbank Military Reserve through Mt Tamborine and thence to the Border Ranges/Lamington Plateau Quoll population.

The precautionary principle dictates that until targeted studies are undertaken, these corridors be considered essential inter-population linkages and actions taken to maintain them as such.

4. Potential impacts of the North Beaudesert OUM plan on Quolls

The very short life-span (i.e. about 3 years) and low breeding rate (i.e. 1 litter of no more than 6 young/year) means that Quoll populations can not sustain consecutive years of low recruitment, or sustained levels of unnaturally high mortality. This, coupled with the species wide-ranging behaviour (i.e. animals forage over several kilometers/night), and their opportunistic foraging (i.e. Quolls eat everything of animal origin ranging from rancid roadkill to caged poultry, meaty household scraps and pet food to rodents and possums), means that individuals are very susceptible to encountering hostile environments such as roads and households. The high extinction proneness of Quoll populations also require that inter-population linkages be maintained and enhanced where possible, to ensure the long-term survival of the MLNBSA quoll population.

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This combination of life history strategy, feeding and ranging behaviour has lead to Spotted-tailed Quolls becoming one of the most susceptible Australian species to the intensification of land-use and to offsite effects resulting from development. In particular, roads and urbanization in areas adjacent to Quoll habitat can take an immense toll on Quoll populations (see below).

Research suggests the following specific threats to Quoll populations in general, and within the MLNBSA in general:

(1) Habitat loss

The North Beaudesert OUM Plan proposes to replace large areas of native vegetation (and potential Quoll habitat) with housing estates, enterprise precincts and linear service infrastructure.

Habitat loss is the single greatest threat to any wildlife species. Being at the top of the food chain, Spotted-tailed Quolls are particularly affected by habitat loss, both because of their large spatial requirements (i.e. about 500 – 1000ha per animal), and because of their dependence on a diverse and abundant mammalian prey community. Therefore even habitat change which results in nothing except the loss of tree hollows will affect Quolls through a decline in possum populations.

Female Quolls have specialized denning requirements during the period of litter rearing. Maternity dens are usually found within tree hollows and rock piles. They are usually characterised by a long and narrow entrance tunnel into a larger nursery chamber. These are not common landscape features, and their loss may render an area unsuitable to Quolls, even if other factors such as food are present.

The SEQ Regional Plan sets out Indicators of the Natural Environment (Table 3, p.25). These include Extinct, Endangered and Vulnerable species and ecological communities. The presence of populations of the Spotted Tailed Quoll, and other Rare and Threatened species (e.g. Glossy Black Cockatoo, acid frog Crinia tinnula, Koala and others still being collated), therefore provides grounds for classifying remnant vegetation within the MLNBSA as Essential Habitat by the Qld EPA.

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(2) Habitat fragmentation

The North Beaudesert OUM Plan will cause fragmentation of potential inter-population linkages via the Spring Mountain/Teviot Range area to the south-west and through the Munruben/Logan area to the south-east. Fragmentation of the MLNBSA Quoll population, and the hypothetical Border Ranges-Greenbank meta-population, will result from clearing, development and subsequent impermeability of housing estates, enterprise precincts and linear service infrastructure to movements by Quolls.

Habitat fragmentation occurs as a result of partial clearing of the landscape, such that not all remnant vegetation is removed, however fauna access between these remnants is greatly reduced such that fauna populations become fragmented which in turn results in lower numbers in each new fragmented population and increases the risks of extinction through inbreeding and stochastic events.

There are also precedents (existing Essential Habitat Mapping and Beaudesert Shire Council Biodiversity Mapping Map PM 31A) for State, Regional and Local Bioregional corridors in the MLNBSA to be re-evaluated, including the addition for Norris Creek to Greenbank to Greenbank Military Training Area, and a corridor along Chambers Ck.

(3) Roadkill

Green and Scarborough (1990) attribute the majority of human induced mortality of the species in Tasmania today to road kills. In Queensland there are fewer data, but many Quolls are reported to authorities as roadkill. Tasmanian researchers found that local populations of two Quoll species, the Spotted-tailed and Eastern Quolls became extinct following the development of a high speed road environment through Quoll habitat in Tasmania.

Quolls spend a lot of time on roads, where they forage for roadkills. They also use roads as sites for scent marking.

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Quoll roadkills are known to have occurred in the MLNBSA at Mt Lindesay Highway, Teviot Rd, Greenhill Rd, and Goodna-Springfield Rd.

A direct result of increased business and residential populations will be increases in traffic on existing roads and development of new road infrastructure in particular, the OUM proposes new road investigations for a Gateway Motorway extension that will link up to Chambers Flat Rd and Crowson Lane, as well as two road investigations for New Beith and Flagstone area west of the interstate rail line at present.

This will create a major and probably unsustainable mortality sink for Spotted-tailed Quolls in the area, which are expected to be killed on the areas roads at ever increasing rates as the area develops.

(4) Domestic dogs and cats

A direct result of proposed urban communities in Park Ridge, Boronia Heights, Greenbank Central, New Bieth, Flagstone and Undullah will be larger numbers of dogs in the area. Even when contained in backyards, this will result in an increased kill rate. Our surveys to date suggest that backyards in the region are regularly visited by Quolls at present.

Dogs rarely prey on Quolls in natural situations, where Quolls can readily escape up trees and into rockpiles. In more open, modified landscapes, Quolls can be trapped in open areas and killed by dogs. Dogs rarely eat the Quolls they kill.

Adult Cats and Quolls are evenly matched as combatants and probably rarely come into direct conflict. However, young Quolls have been known to be killed by cats and vice versa, Quolls have been known to hunt kittens.

(5) Poisoning

1080 baiting

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It is likely that increases in the residential/bushland edge will result in an increase in wild dogs incidents and calls for council control of wild dogs in adjacent natural areas, especially in the Flagstone/Undullah area. Control by 1080-baiting is likely to be sought and may impact on Quoll populations.

Circumstantial evidence suggests that accidental poisoning of Quolls occurs when they ingest baits laid for wild dog control (e.g. Belcher 1996), although there is also evidence to the contrary (Cremasco unpublished data). Although Quolls are more resistant to the effects of 1080 than dogs and foxes, the amounts of 1080 used in meat baits in Queensland is still potentially high enough to result in massive mortality.

Secondary poisoning

An increase in the number of workplaces and households in the Park Ridge, Boronia Heights, Greenbank Central, New Beith, Flagstone and Undullah areas is likely to result in increases in the number of people using rodenticides, and an increase in the number of poisoned rats available for scavengers (including Quolls) in the environment.

An unknown but potentially very significant impact on peri-urban Quoll populations is secondary poisoning when they consume rats which have been poisoned in domestic households and in places of business. Quolls are inveterate scavengers which naturally consume living and dead animals. There may also be other secondary poisoning risks associated with suburbia (e.g. Blue-tongue Lizards are known to die from eating poisoned snails and its unknown if this poison would affect Quolls which subsequently consume these blue-tongues).

(6) Hostile landowners

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An increase in the number of householders in the area, and our documentation of Quolls visiting local backyards here, suggest that interactions between Quolls and humans will increase. We would therefore also expect the incidence of hostile interactions to increase.

Deliberate killings of Spotted-tailed Quolls occur in retaliation for their depredations upon domestic poultry and other pets, and to a lesser extent, when they enter houses, scavenging for food and food scraps.

Of 152 collated records of D. maculatus in Queensland, 91 were of animals that were found at poultry yards or scavenging around houses. The predilection of D. maculatus for poultry has been noted in many instances dating back to Goulds' observations from the late 1800s (Gould 1974). In this monograph he describes the species as, "a most dreaded enemy to poultry: it is consequently regarded by the settler as one of his greatest pests" (p110). A common theme during the closer settlement of Ouoll habitat is of immediate Ouoll depredations upon poultry, retaliation against Ouolls and rapid disappearance of D. maculatus from those areas (e.g. Lunney and Leary (1988), Bennett (1990)).

Museum records also indicate that Quolls attack aviary birds and house cats.

5. Recommendations: Mitigating Potential Impacts

The magnitude and geographical locus of potential impacts identified above can not be defined at present; there is insufficient information on the distribution and movements of Quolls in the MLNBSA and adjacent areas. Therefore I submit that a comprehensive regional survey of Spotted-tailed Quoll populations within and adjacent to the MLNBSA be undertaken prior to any further planning or on-ground works are undertaken. These surveys are to include studies of population demography, movement patterns, and key resource areas e.g. den sites, foraging areas.

I note also that Spotted-tailed Quoll habitat was not one of the filters used in the constraints mapping study, and so submit that constraints mapping should be rerun using information already collated

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by the community and any subsequent information collated as a result of further studies conducted within the MLNBSA.

As a general consideration, and in lieu of further data, provisions must be made to maintain current areas of remnant vegetation as open space (conservation) areas, and to maintain and enhance existing wildlife corridors.

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ATTACHMENT 2 - STATUATORY DECLARATION TERRY HERARA QUOLL SIGTHING TEVIOT RD JANUARY 2012

I ,Terry Ann Herrera, born on the 30^{th} October 1968 resides at 1-5 Bluebird Court Greenbank Qld and I have lived here since April 2000.

On Saturday January 18th I was returning home traveling south along Teviot Road in my vehicle. The time was approximately 1:40am. I had my high beams on and I spotted an animal crossing over from the **east to west** (right hand lane into the left hand lane). As I got closer I realised that my high beam had startled the animal and it had come to a complete stop in the middle of the road. I brought my vehicle to a complete stop approximately half a car length from the animal and dimmed my high beam and as I did so I realised that this animal was a spotted Quoll. The animal continued on it path (to east of Teviot Rd) and crossed over hesitantly into bushland to the left of my vehicle.

This spotted Quoll was the size of a large cat. It had dark brown fur with a very **distinct white spots**. Its tail was the equivalent in length to its body and it had a somewhat pointed nose which was light in colour.

I made a note of the time which the spotted Quoll crossed over safely which was 1:43am and I took note of a marking along the road which was an old sign attached to a tree as I knew this sighting was rare and significant and I needed to report it but I did not know whom to report it to.

On Wednesday 8th February 2012, I received an email from Mike Kelly, President of Save Greenbank INC headed "Anyone seen a Quoll?". On Mike Kelly's email he advised a contact person as Anne Page, President of Logan Albert Conservation Association along with her email address and telephone number.

I emailed Anne Page of LACA the details of my sighting on the night of February 9th at 9:35pm advising her of my sighting.

Anne Page responded to my email requesting I ring her to speak to her about this sighting and on Saturday February 11th at 2:20pm I spoke to Anne Page via telephone. We agreed to meet at the place of the sighting and on Saturday February 11th at 3:00pm I meet Anne Page on Teviot Road so that a GPS marking could be taken of the sighting of the spotted Quoll. The GPS marking taken is as follows: S27 degrees. 44.083 E 152 degrees 59.094.

On Monday February 13th 2012 I prepared this statutory declaration.

Everything I have written in this statutory declaration is true and correct and I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act 1867.

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