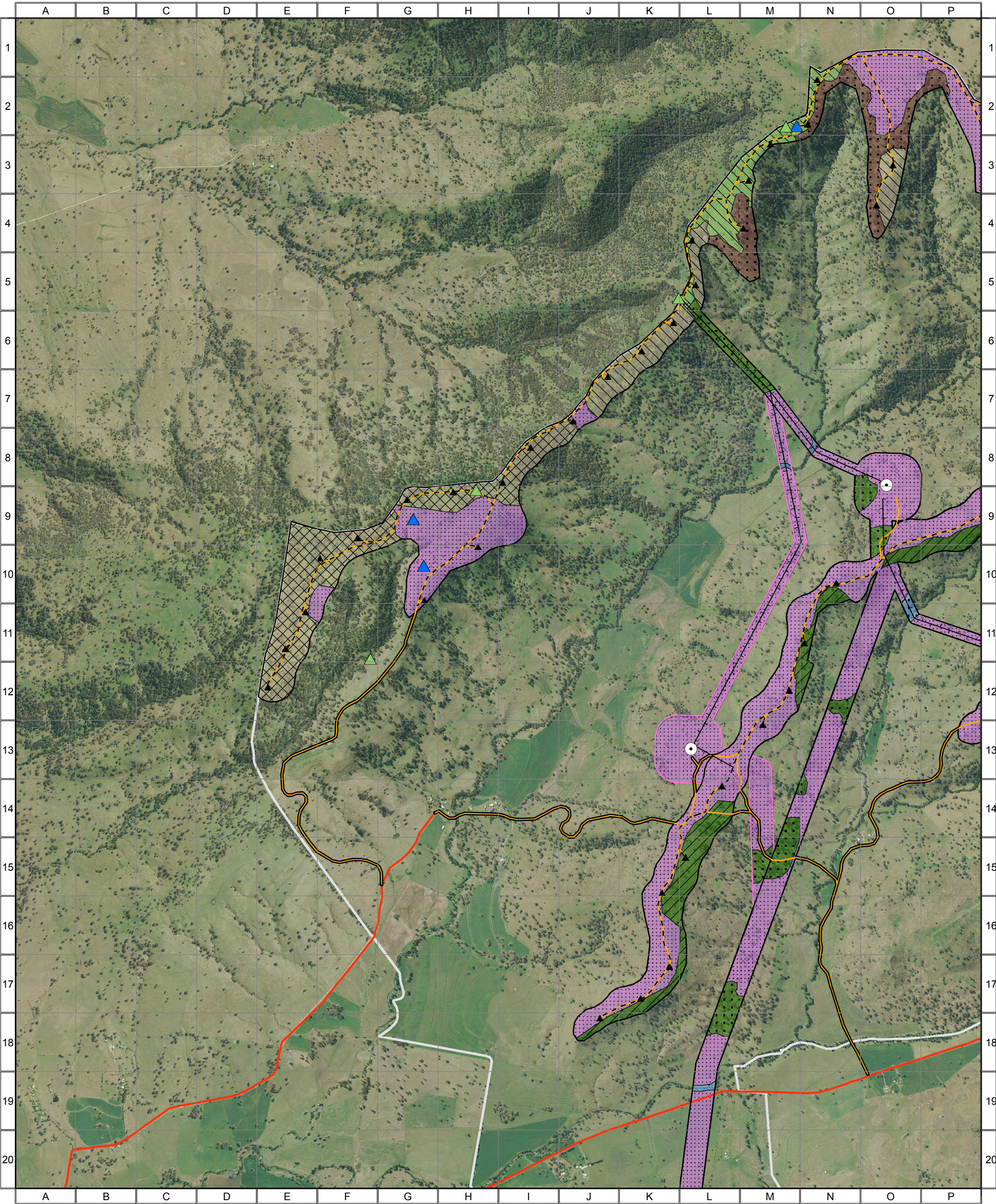


4777 - Liverpool Range (WF Study Area, Map 1) - Results



**Raptors**

- Nankeen kestrel
- Wedge-tailed eagle

Combined Survey Area  
(Preferred Infrastructure Layout)

Combined Survey Area  
(Alternative Infrastructure Layout)

**Vegetation Condition**

- Good
- Moderate-Good
- Moderate
- Poor-Moderate
- Poor
- Exotic

**Vegetation Type**

- Brittle Gum Stringybark Woodland
- Norton's Box Woodland
- River Oak Woodland
- White Box / Grey Box Grassy Woodland
- Native Pasture
- Exotic Pasture

**Indicative Turbine Locations**

- Substations
- Overhead Powerlines
- Underground Powerlines
- Proposed Tracks
- Existing Roads
- Wind Farm Site Boundary

**ngh environmental**

0 0.25 0.5 1 1.5 Kilometres

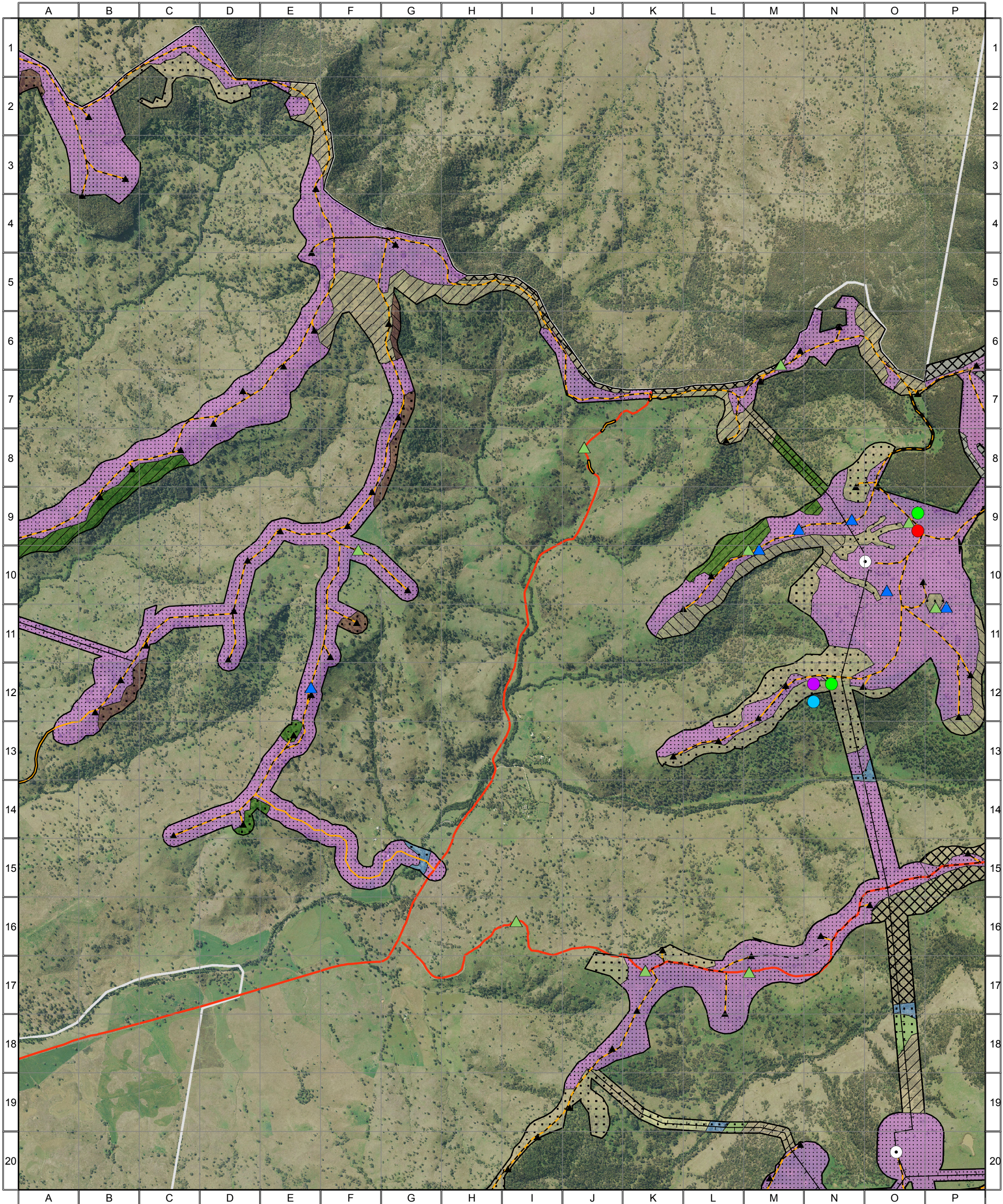
Approx. Scale @ A3 1:32500  
Ref: 4777 - Liverpool Range Wind Farm  
Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55

Based on Infrastructure datasets provided by Epuron (2011-2013)  
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4777 - Liverpool Range (WF Study Area, Map 2) - Results



- Threatened Species - Microbats**
- Common bent-wing bat
  - Corben's long-eared bat
  - Eastern cave bat
  - Large-eared pied bat
- Raptors**
- Nankeen kestrel
  - Wedge-tailed eagle

Combined Survey Area  
(Preferred Infrastructure  
Layout)

- Vegetation Condition**
- Good
  - Moderate-Good
  - Moderate
  - Poor-Moderate
  - Poor
  - Exotic

- Vegetation Type**
- Brittle Gum Stringybark Woodland
  - Mountain Gum Silvertop Stringybark Forest
  - Norton's Box Woodland
  - River Oak Woodland
  - White Box / Grey Box Grassy Woodland
  - Yellow Box Woodland
  - Native Pasture
  - Exotic Pasture

- Infrastructure**
- Indicative Turbine Locations
  - Substations
  - Overhead Powerlines
  - Underground Powerlines
  - Proposed Tracks
  - Existing Roads
  - Wind Farm Site Boundary



0 0.25 0.5 1 1.5 Kilometres

Approx. Scale @ A3 1:32500  
Ref: 4777 - Liverpool Range Wind Farm  
Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55

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4777 - Liverpool Range (WF Study Area, Map 3) - Results



Threatened Species - Raptors

- Scarlet robin  
Brown falcon  
Nankeen kestrel  
Wedge-tailed eagle

Combined Survey Area  
(Preferred Infrastructure  
Layout)

- Good  
Moderate-Good  
Moderate  
Poor-Moderate  
Poor  
Exotic

Vegetation Condition

- Good  
Moderate-Good  
Moderate  
Poor-Moderate  
Poor  
Exotic

Vegetation Type

- Brittle Gum Stringybark  
Woodland  
Mountain Gum Silvertop  
Stringybark Forest  
Norton's Box Woodland  
Exotic Pasture

Indicative Turbine  
Locations

- Substations  
Overhead Powerlines  
Underground Powerlines  
Proposed Tracks  
Existing Roads  
Wind Farm Site Boundary



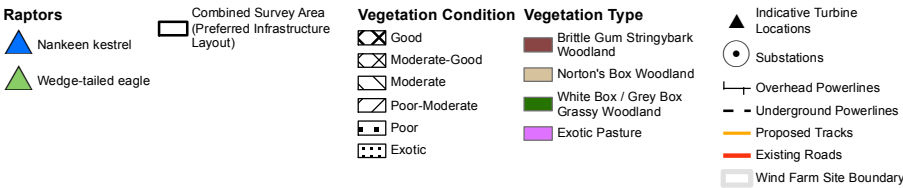
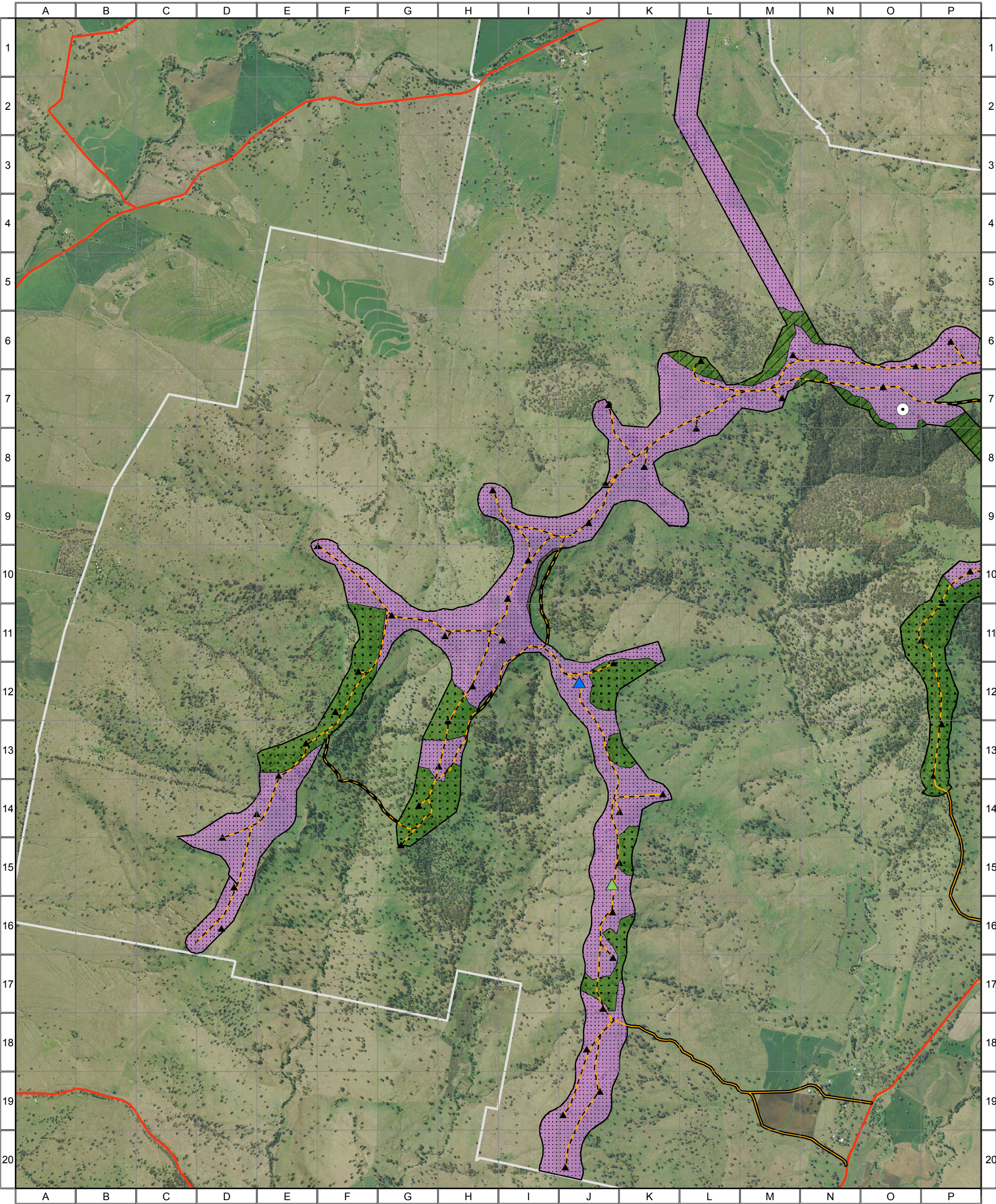
0 0.25 0.5 1 1.5 Kilometres

Approx. Scale @ A3 1:32500  
Ref: 4777 - Liverpool Range Wind Farm  
Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55

Based on Infrastructure datasets provided by Epuron (2011-2013)  
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4777 - Liverpool Range (WF Study Area, Map 4) - Results



0 0.25 0.5 1 1.5 Kilometres

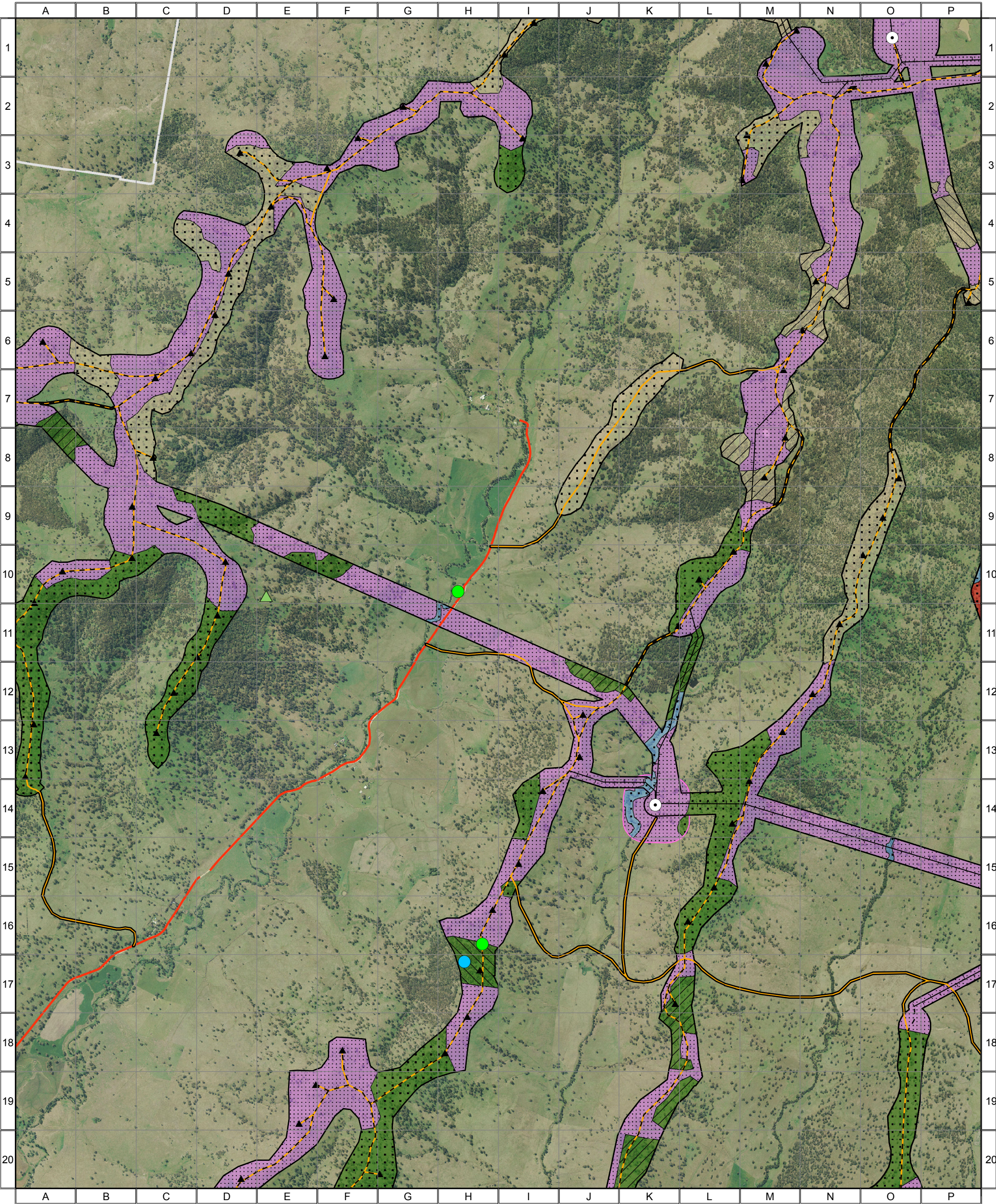
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Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55

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# 4777 - Liverpool Range (WF Study Area, Map 5) - Results



**Threatened Species - Microbats**

- Common bent-wing bat
- Corben's long-eared bat

**Raptors**

- Wedge-tailed eagle

**Combined Survey Area (Preferred Infrastructure Layout)**

**Combined Survey Area (Alternative Infrastructure Layout)**

**Vegetation Condition**

- Good
- Moderate-Good
- Moderate
- Poor-Moderate
- Poor
- Exotic

**Vegetation Type**

- Norlon's Box Woodland
- Riparian Forest - Rough-barked Apple, Blakely's Red Gum and Yellow Box
- River Oak Woodland
- White Box / Grey Box Grassy Woodland
- Native Pasture
- Exotic Pasture

**Indicative Turbine Locations**

- Substations
- Overhead Powerlines
- Underground Powerlines
- Proposed Tracks
- Existing Roads
- Wind Farm Site Boundary

**ngh environmental**

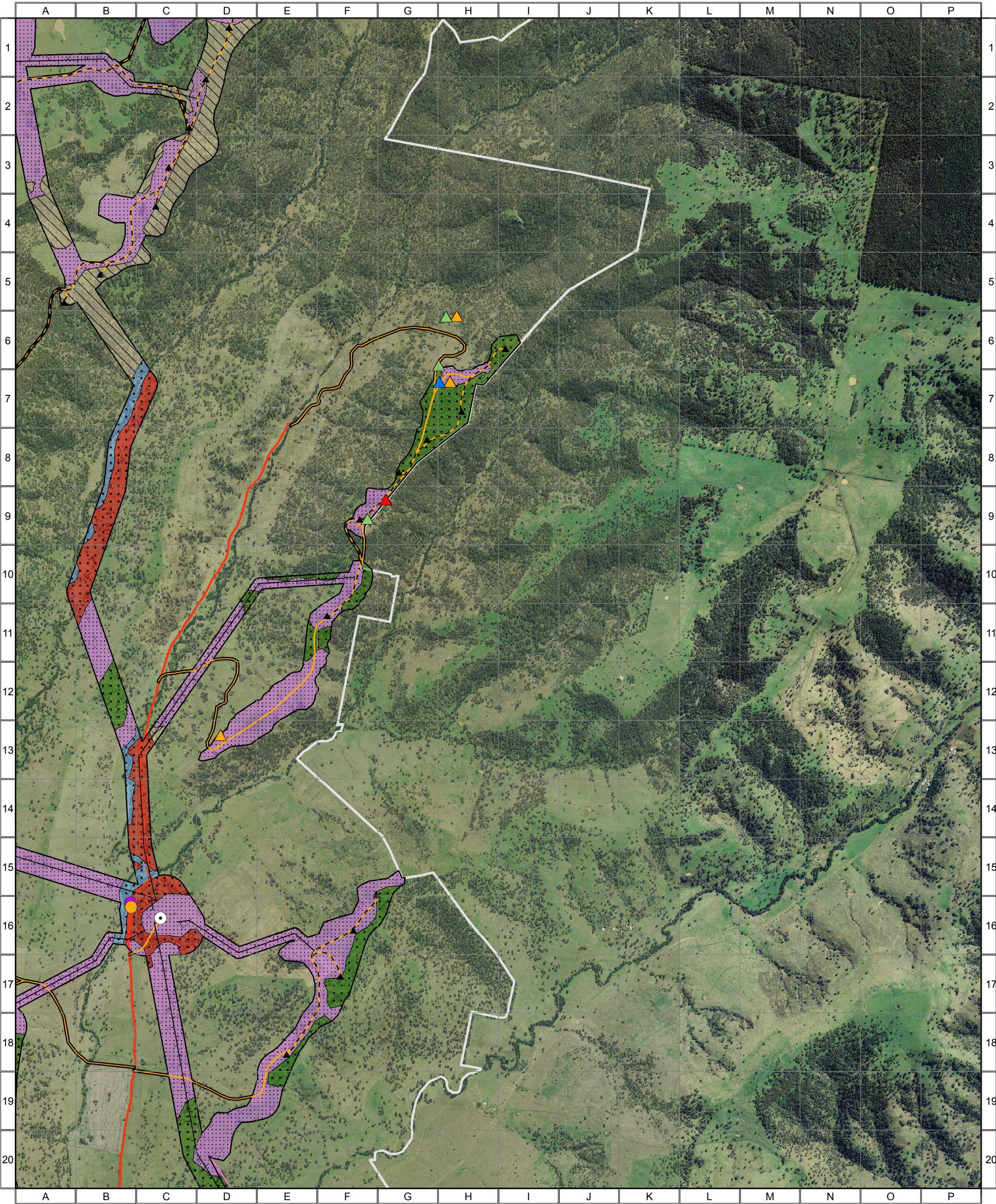
0 0.25 0.5 1 1.5 Kilometres

Approx. Scale @ A3 1:32500  
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Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55

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4777 - Liverpool Range (WF Study Area, Map 6) - Results



- Threatened Species - Birds**
- Varied sittella
- Threatened Species - Mammals**
- Squirrel glider
- Threatened Species - Microbats**
- Large-eared pied bat
- Threatened Species - Raptors**
- Brown falcon
  - Nankeen kestrel
  - Wedge-tailed eagle

- Vegetation Condition**
- Good
  - Moderate-Good
  - Moderate
  - Poor-Moderate
  - Poor
  - Exotic
- Vegetation Type**
- Norton's Box Woodland
  - Riparian Forest - Rough-barked Apple, Blakely's Red Gum and Yellow Box
  - River Oak Woodland
  - White Box / Grey Box Grassy Woodland
  - Exotic Pasture

- Infrastructure**
- Indicative Turbine Locations
  - Substations
  - Overhead Powerlines
  - Underground Powerlines
  - Proposed Tracks
  - Existing Roads
  - Wind Farm Site Boundary



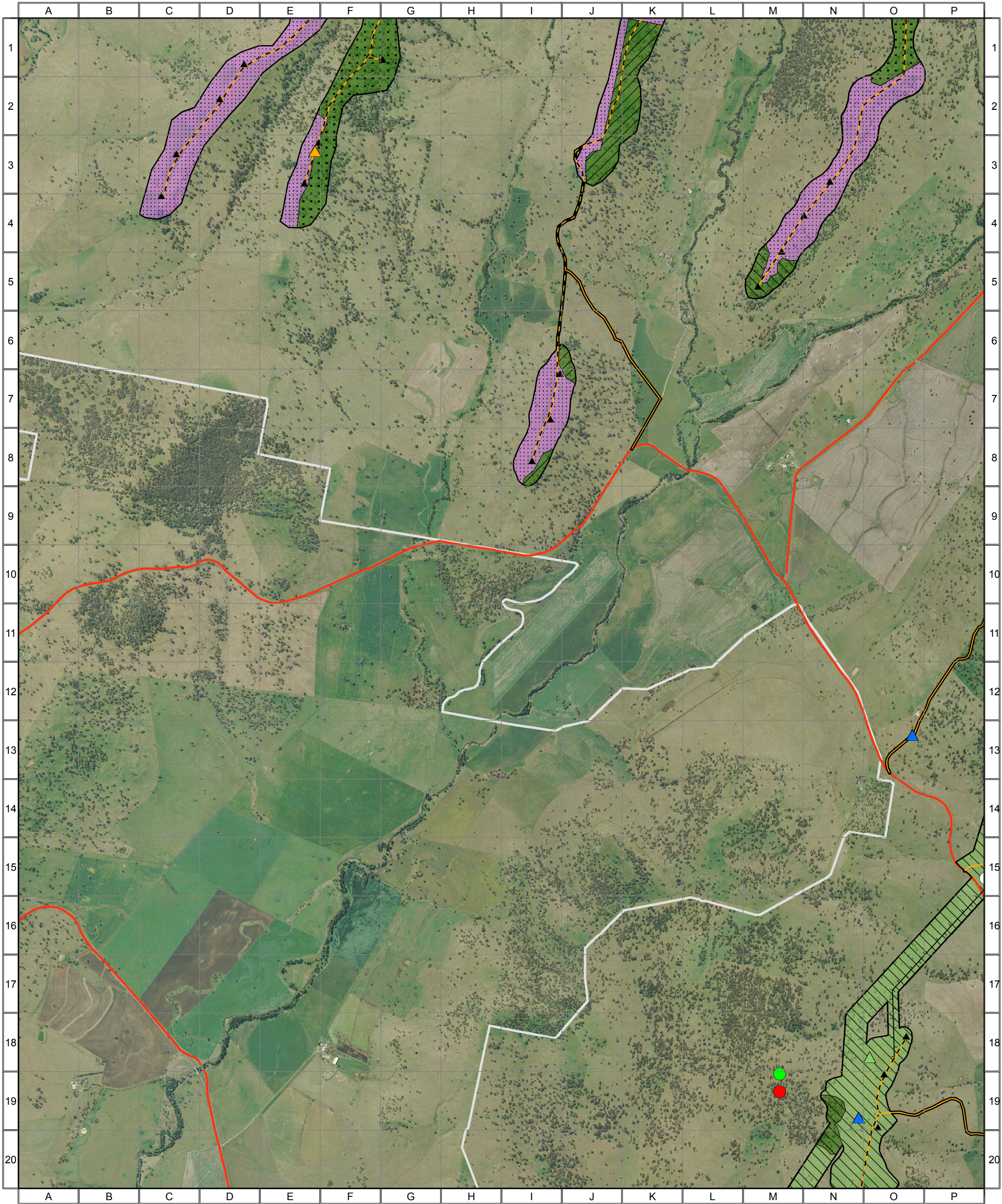
0 0.25 0.5 1 1.5 Kilometres

Approx. Scale @ A3 1:32500  
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Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55

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4777 - Liverpool Range (WF Study Area, Map 7) - Results



**Threatened Species - Microbats**

- Common bent-wing bat
- Eastern cave bat

**Raptors**

- Brown falcon
- Nankeen kestrel
- Wedge-tailed eagle

**Combined Survey Area (Preferred Infrastructure Layout)**

- Good
- Moderate-Good
- Moderate
- Poor-Moderate
- Poor
- Exotic

**Vegetation Condition**

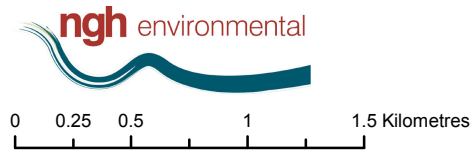
- White Box / Grey Box
- Grassy Woodland
- Native Pasture
- Exotic Pasture

**Vegetation Type**

- White Box / Grey Box
- Grassy Woodland
- Native Pasture
- Exotic Pasture

**Indicative Turbine Locations**

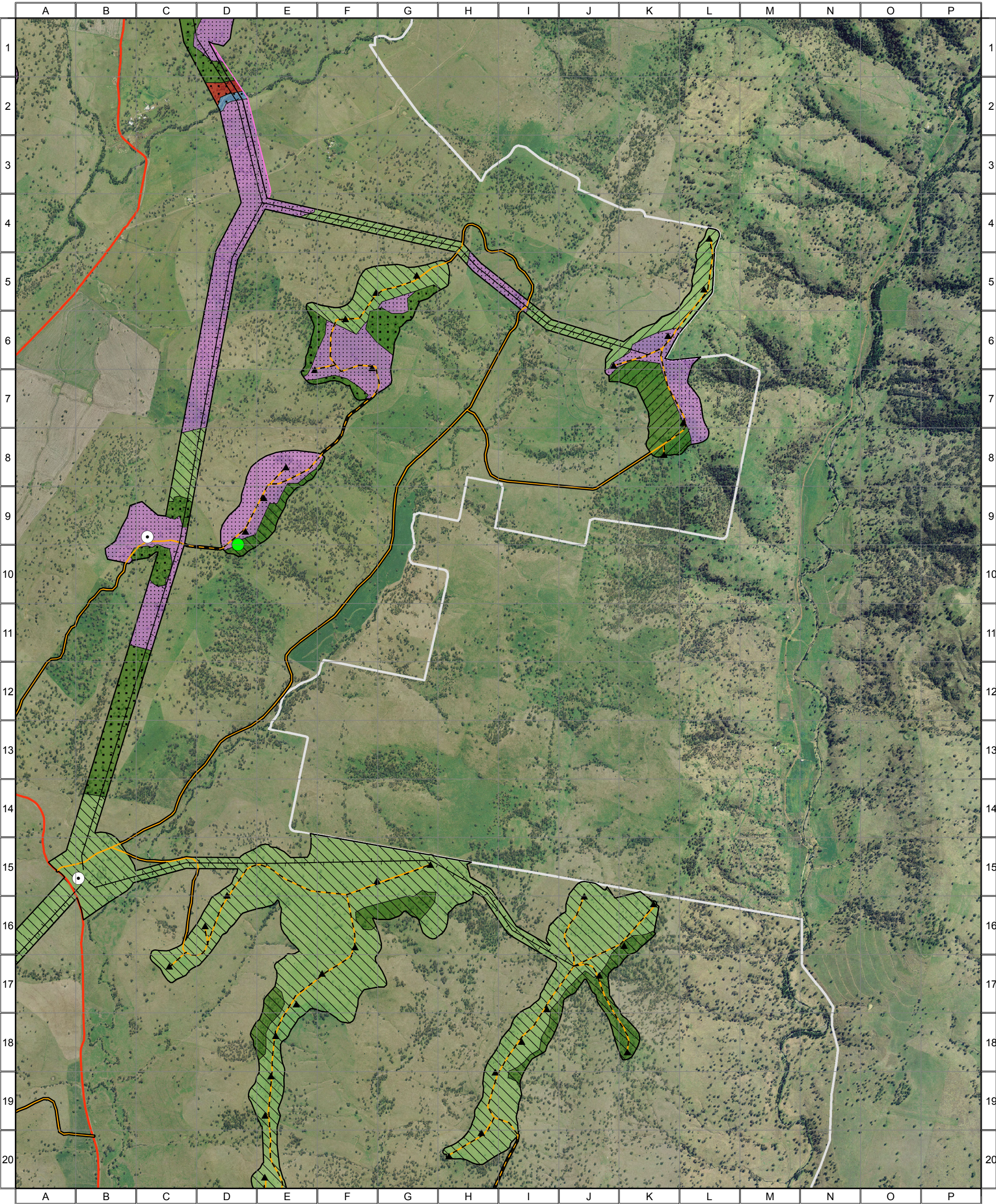
- Substations
- Overhead Powerlines
- Underground Powerlines
- Proposed Tracks
- Existing Roads
- Wind Farm Site Boundary



Approx. Scale @ A3 1:32500  
Ref: 4777 - Liverpool Range Wind Farm  
Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55  
Based on Infrastructure datasets provided by Epuron (2011-2013)  
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4777 - Liverpool Range (WF Study Area, Map 8) - Results



Threatened Species - Microbats

Common bent-wing bat

Combined Survey Area (Preferred Infrastructure Layout)  
Combined Survey Area (Alternative Infrastructure Layout)

**Vegetation Condition**  
Good  
Moderate-Good  
Moderate  
Poor-Moderate  
Poor  
Exotic

**Vegetation Type**  
Riparian Forest - Rough-barked Apple, Blakely's Red Gum and Yellow Box  
River Oak Woodland  
White Box / Grey Box Grassy Woodland  
Native Pasture  
Exotic Pasture

**Indicative Turbine Locations**  
Substations  
Overhead Powerlines  
Underground Powerlines  
Proposed Tracks  
Existing Roads  
Wind Farm Site Boundary

ngh environmental

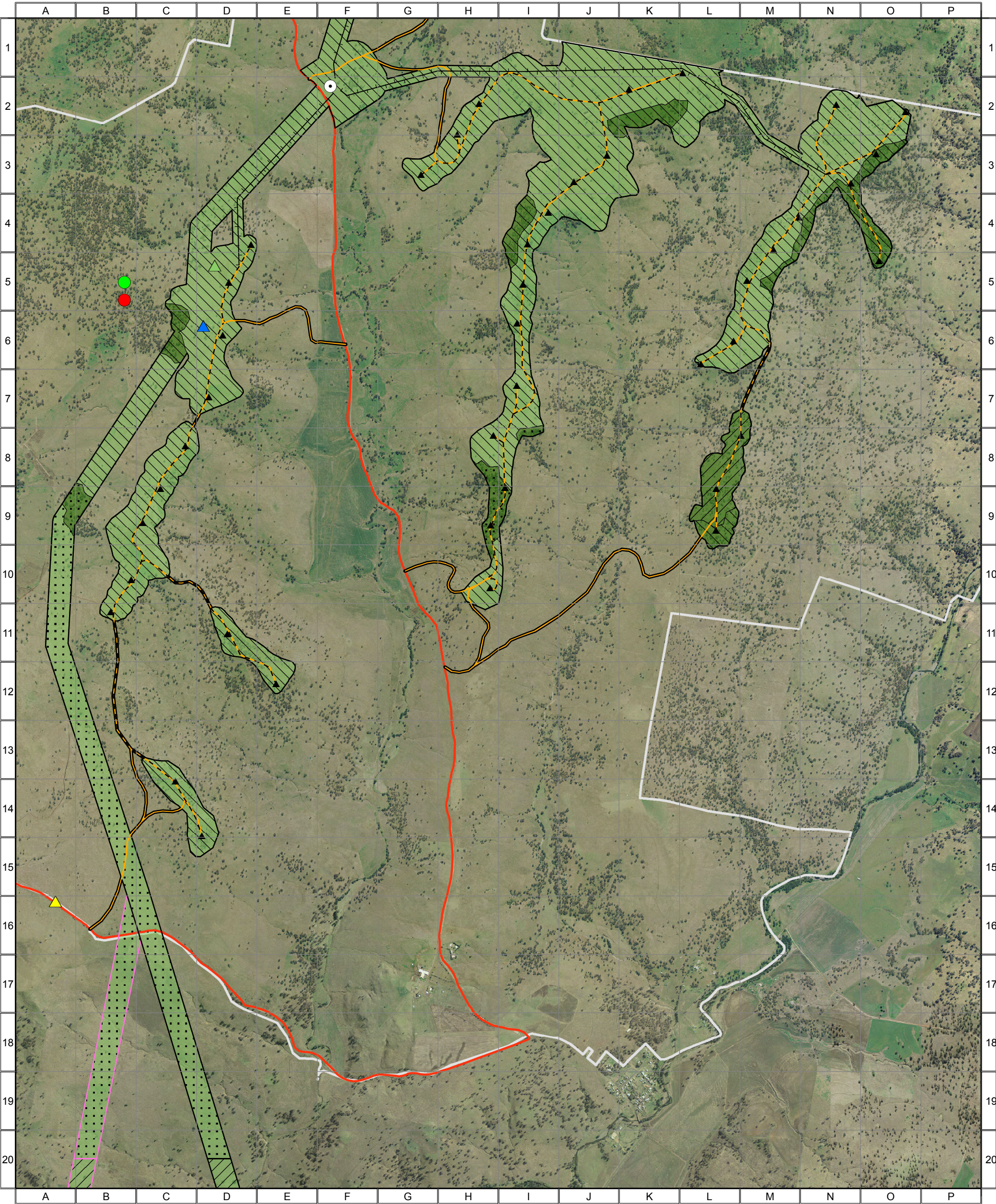
0 0.25 0.5 1 1.5 Kilometres

Approx. Scale @ A3 1:32500  
Ref: 4777 - Liverpool Range Wind Farm  
Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55

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4777 - Liverpool Range (WF Study Area, Map 9) - Results



**Threatened Species - Microbats**

- Common bent-wing bat
- Eastern cave bat

**Raptors**

- Black-shouldered kite
- Nankeen kestrel
- Wedge-tailed eagle

Combined Survey Area (Preferred Infrastructure Layout)

Combined Survey Area (Alternative Infrastructure Layout)

**Vegetation Condition**

- Good
- Moderate-Good
- Moderate
- Poor-Moderate
- Poor
- Exotic

**Vegetation Type**

- White Box / Grey Box Grassy Woodland
- Native Pasture

Indicative Turbine Locations

Substations

Overhead Powerlines

Underground Powerlines

Proposed Tracks

Existing Roads

Wind Farm Site Boundary



0 0.25 0.5 1 1.5 Kilometres

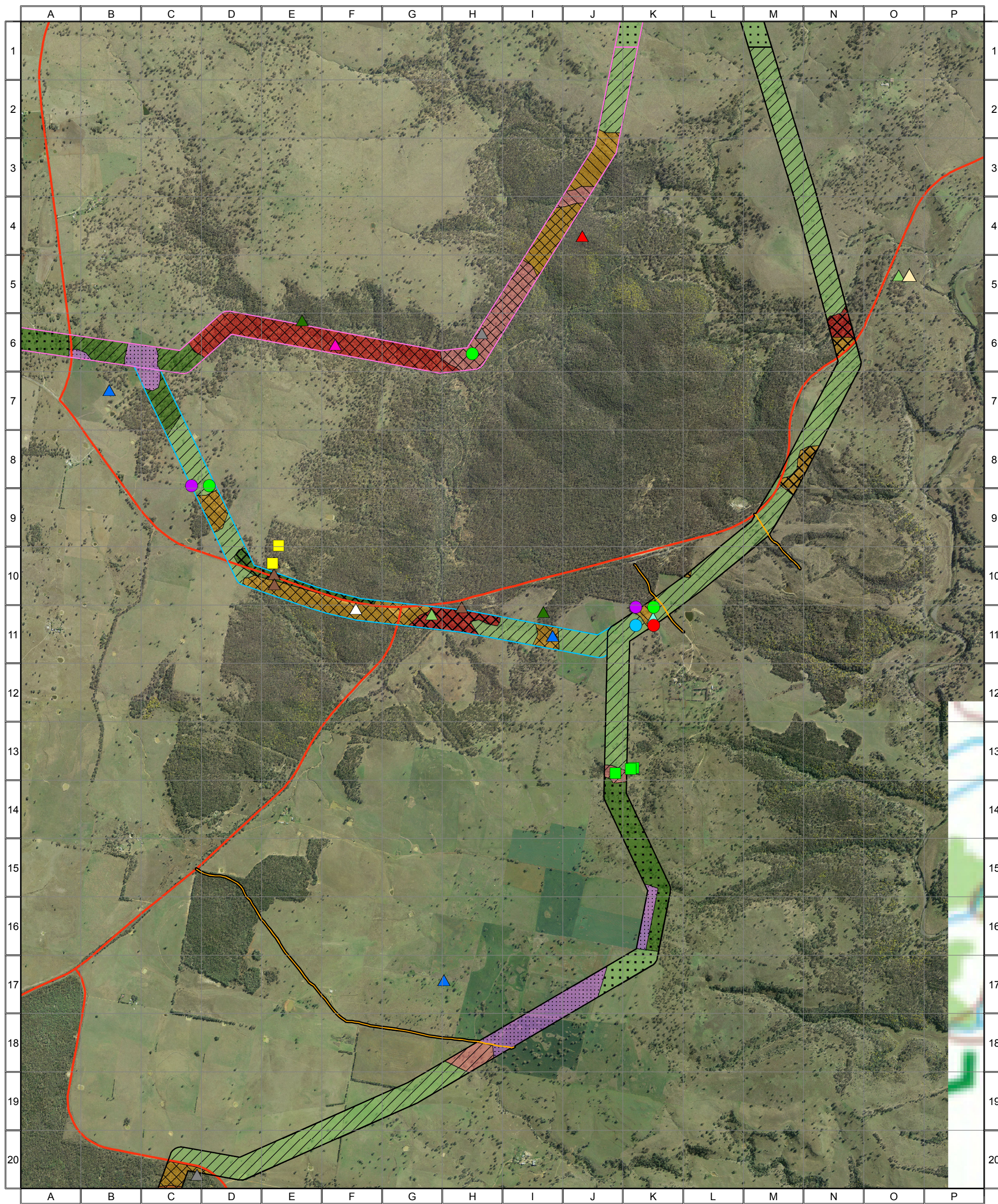
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Ref: 4777 - Liverpool Range Wind Farm  
Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55


































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## 4777 - Liverpool Range (TL Study Area, Map 1) - Results



- |  |  |   |  |   |  |  |
|--|--|---|--|---|--|--|
| <b>Threatened Species - Flora</b><br> <i>Acacia ausfeldii</i><br> <i>Swainsona sericea</i> | <b>Threatened Species - Microbats</b><br> Common bent-wing bat<br> Corben's long-eared bat<br> Eastern cave bat<br> Large-eared pied bat | <b>Raptors</b><br> Australian hobby<br> Nankeen kestrel<br> Wedge-tailed eagle<br> Wedge-tailed eagle (nest site) |  Combined Survey Area (Preferred Infrastructure Layout)<br> Combined Survey Area (Alternative Infrastructure Layout)<br> Combined Survey Area (2nd Alternative Infrastructure Layout) | <b>Vegetation Condition</b><br> Good<br> Moderate-Good<br> Moderate<br> Poor-Moderate<br> Poor<br> Exotic | <b>Vegetation Type</b><br> Riparian Forest - Rough-barked Apple and Blakely's Red Gum<br> Riparian Forest - Rough-barked Apple, Blakely's Red Gum and Yellow Box<br><br> Sandstone Forest - Narrow-leaved Ironbark dominant<br> Sandstone Forest - Red Ironbark dominant<br> White Box / Grey Box Grassy Woodland<br> Native Pasture<br> Exotic Pasture |  Indicative Turbine Locations<br> Substations<br> Overhead Powerlines<br> Underground Powerlines<br> Proposed Tracks<br> Existing Roads<br> Wind Farm Site Boundary |
|--|--|---|--|---|--|--|



0 0.25 0.5 1 1.5 Kilometres

Approx. Scale @ A3 1:32500

Ref: 4777 - Liverpool Range Wind Farm

Produced by: Tom Hamilton

Date: 15 November 2013

Projection: GDA94 MGA Zone 55  
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4777 - Liverpool Range (TL Study Area, Map 2) - Results



**Threatened Species - Flora**

Acacia ausfeldii

**Threatened Species - Birds**

Brown tree creeper

Glossy black cockatoo

Glossy black cockatoo (foraging)

Grey crowned babbler

Speckled warbler

Varied sitella

**Threatened Species - Microbats**

Common bent-wing bat

Corben's long-eared bat

Eastern cave bat

Large-eared pied bat

Yellow-bellied sheath-tail bat

**Raptors**

Nankeen kestrel

Wedge-tailed eagle

Wedge-tailed eagle (nest site)

**Vegetation Condition**

Good

Moderate-Good

Moderate

Poor-Moderate

Poor

Exotic

**Vegetation Type**

Riparian Forest - Rough-barked Apple and Blakely's Red Gum

Riparian Forest - Rough-barked Apple, Blakely's Red Gum and Yellow Box

Sandstone Forest - Inland Scribbly Gum dominant

Sandstone Forest - Narrow-leaved Ironbark dominant

Sandstone Forest - Red Ironbark dominant

White Box / Grey Box

Grassy Woodland

Native Pasture

Exotic Pasture

**Indicative Turbine Locations**

Substations

Overhead Powerlines

Underground Powerlines

Proposed Tracks

Existing Roads

Wind Farm Site Boundary

ngh environmental

0 0.25 0.5 1 1.5 Kilometres

Approx. Scale @ A3 1:32500

Ref: 4777 - Liverpool Range Wind Farm

Produced by: Tom Hamilton

Date: 15 November 2013

Projection: GDA94 MGA Zone 55

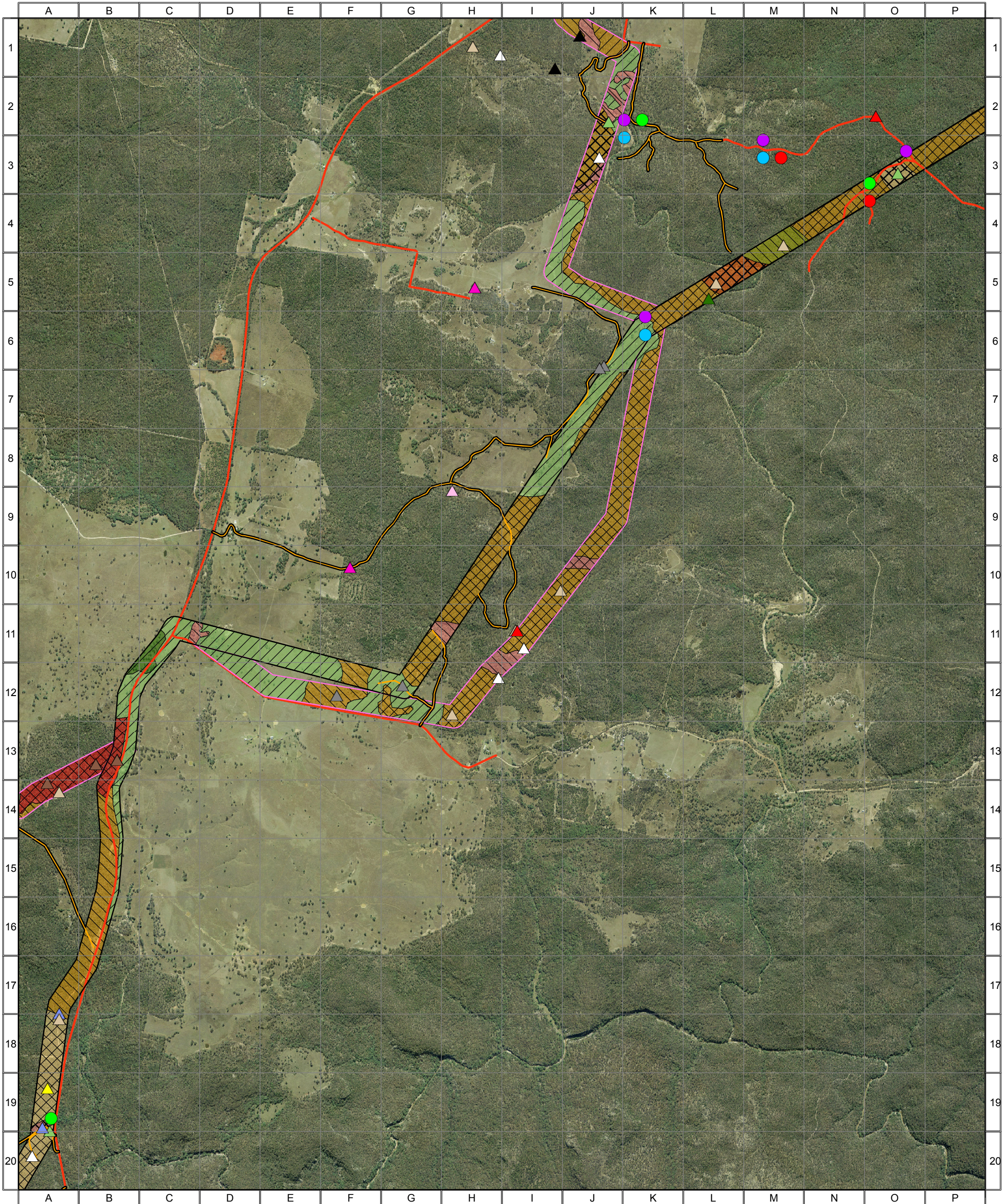
Based on Infrastructure datasets provided by Epuron (2011-2013)

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4777 - Liverpool Range (TL Study Area, Map 3) - Results



- Threatened Species - Birds**
- Brown treecreeper
  - Diamond firetail
  - Glossy black-cockatoo
  - Glossy black cockatoo (foraging)
  - Grey crowned babbler
  - Painted honeyeater
  - Powerful owl
  - Speckled warbler
  - Varied sitella

- Threatened Species - Microbats**
- Common bent-wing bat
  - Corben's long-eared bat
  - Eastern cave bat
  - Large-eared pied bat

- Raptors**
- Wedge-tailed eagle
  - Wedge-tailed eagle (nest site)
  - Whistling kite

- Vegetation Condition**
- Good
  - Moderate-Good
  - Moderate
  - Poor-Moderate
  - Poor
  - Exotic

- Vegetation Type**
- Riparian Forest - Rough-barked Apple and Blakely's Red Gum
  - Riparian Forest - Rough-barked Apple, Blakely's Red Gum and Yellow Box
  - Sandstone Forest - Black Cypress Pine dominant
  - Sandstone Forest - Inland Scribbly Gum dominant
  - Sandstone Forest - Narrow-leaved Ironbark dominant
  - Sandstone Forest - Red Ironbark dominant
  - White Box / Grey Box Grassy Woodland
  - Native Pasture

- Indicative Turbine Locations**
- Substations
  - Overhead Powerlines
  - Underground Powerlines
  - Proposed Tracks
  - Existing Roads
  - Wind Farm Site Boundary

**ngh environmental**

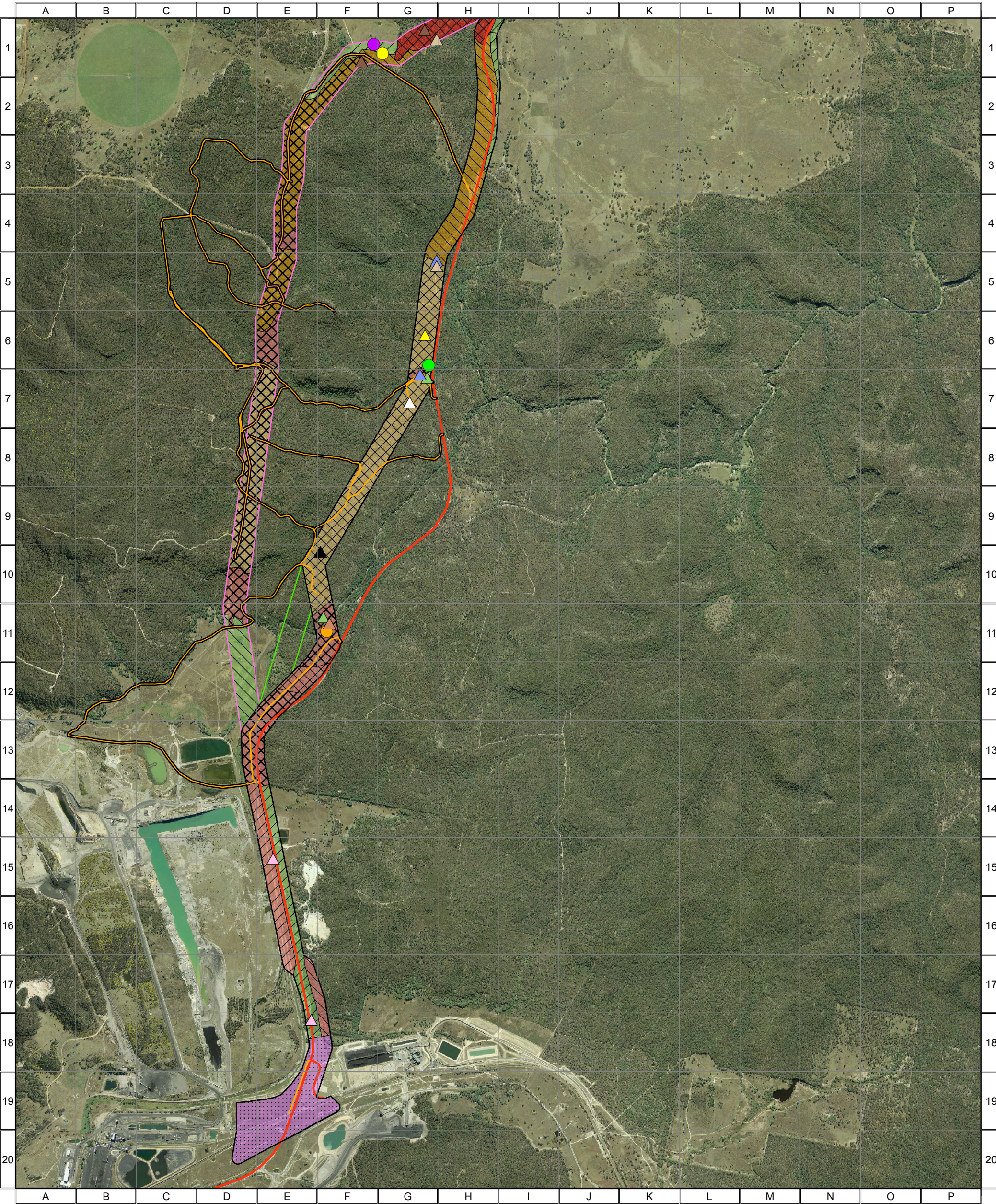
0 0.25 0.5 1 1.5 Kilometres

Approx. Scale @ A3 1:32500  
Ref: 4777 - Liverpool Range Wind Farm  
Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55

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4777 - Liverpool Range (TL Study Area, Map 4) - Results



Threatened Species - Birds

- Brown treecreeper
- Glossy black-cockatoo
- Glossy black cockatoo (foraging)
- Painted honeyeater
- Powerful owl
- Speckled warbler
- Square-tailed kite (nest site)

Threatened Species - Mammals

- Squirrel glider

Threatened Species - Microbats

- Common bent-wing bat
- Large-eared pied bat
- Yellow-bellied sheath-tail bat

Raptors

- Australian hobby
- Wedge-tailed eagle
- Whistling kite

Combined Survey Area (Preferred Infrastructure Layout)

- Proposed deviation for Square-tailed Kite nest buffer
- Combined Survey Area (Alternative Infrastructure Layout)

Vegetation Condition

- Good
- Moderate-Good
- Moderate
- Poor-Moderate
- Poor
- Exotic

Vegetation Type

- Riparian Forest - Rough-barked Apple and Blakely's Red Gum
- Riparian Forest - Rough-barked Apple, Blakely's Red Gum and Yellow Box
- Sandstone Forest - Inland Scribbly Gum dominant
- Sandstone Forest - Narrow-leaved Ironbark dominant
- Native Pasture
- Exotic Pasture

Indicative Turbine Locations

- Substations
- Overhead Powerlines
- Underground Powerlines
- Proposed Tracks
- Existing Roads
- Wind Farm Site Boundary



0 0.25 0.5 1 1.5 Kilometres

Approx. Scale @ A3 1:32500  
Ref: 4777 - Liverpool Range Wind Farm  
Produced by: Tom Hamilton  
Date: 15 November 2013  
Projection: GDA94 MGA Zone 55

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