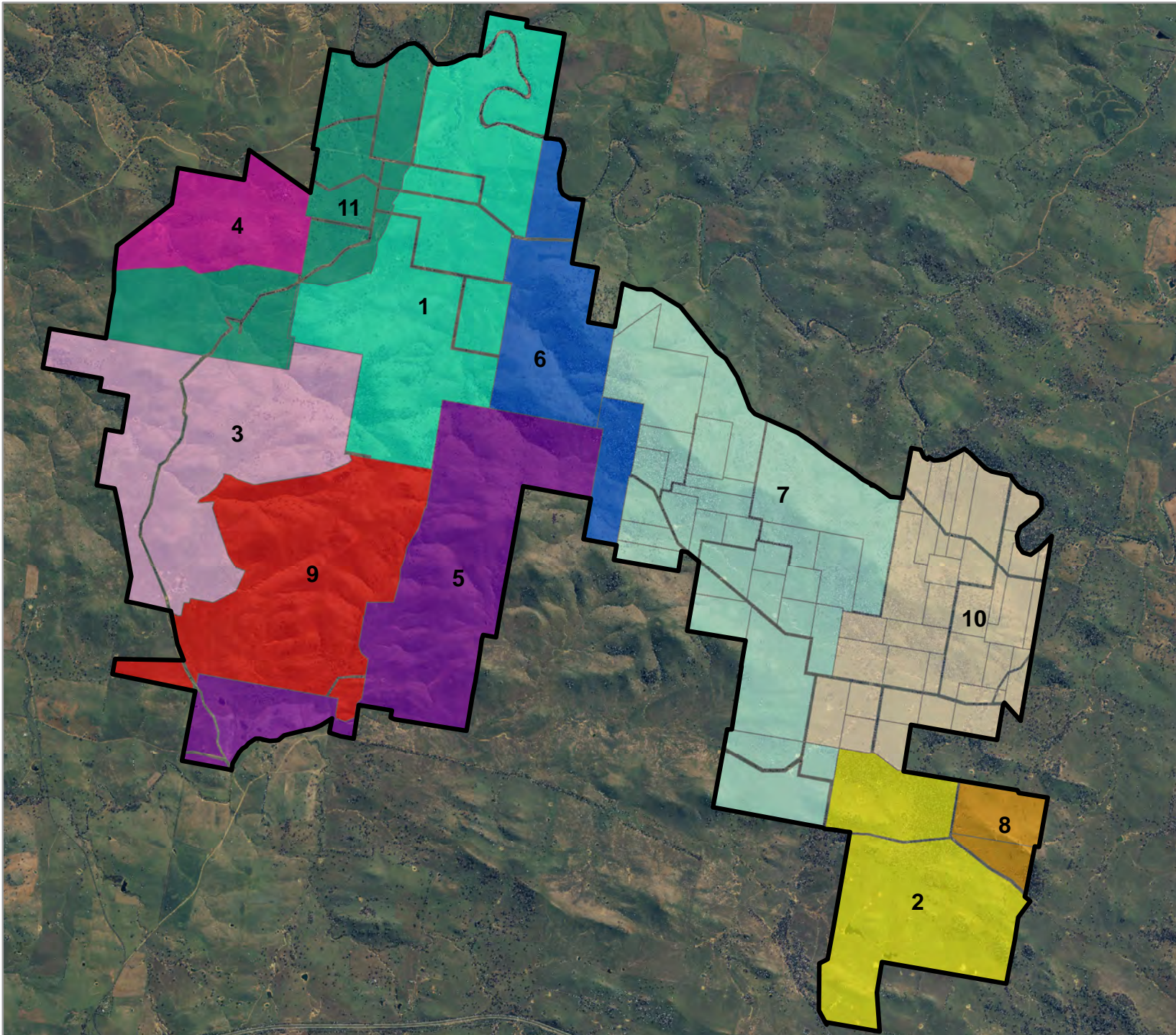


APPENDIX A MAP SETS

A.1 INVOLVED LANDOWNER MAP



INVOLVED LANDOWNERS

Coppabella Wind Farm

Project area

Landowner

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Notes:

- Data courtesy of Goldwind, received July 2017
- Aerial imagery courtesy of Epuron 2012



A4 @ 1:66000
 Ref: 16440 25072017
 Author: JB

ngh environmental

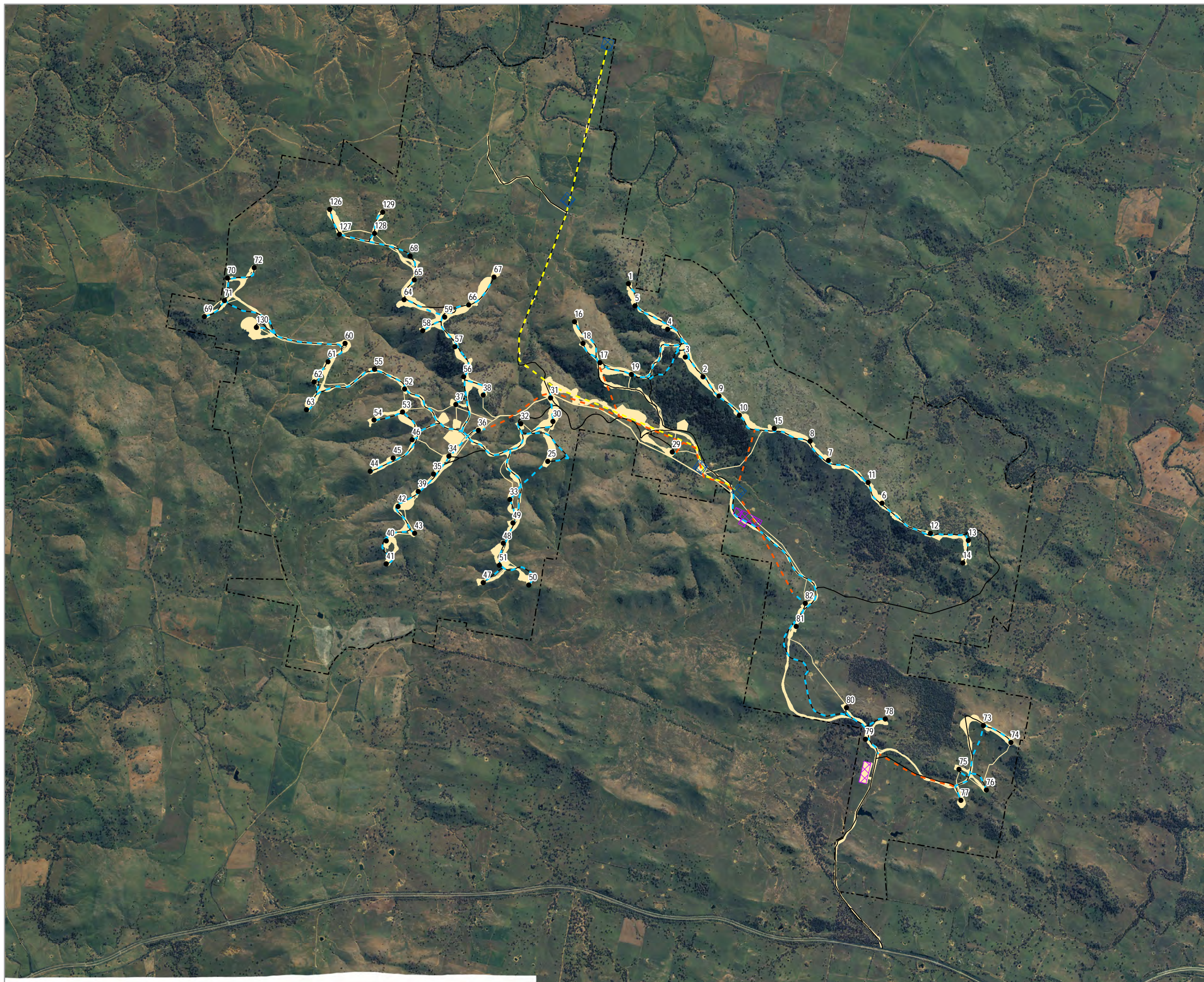


A.2 APPROVED VERSUS MODIFIED PROJECT - including detailed vegetation mapping

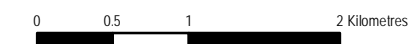
MODIFIED CONSTRUCTION FOOTPRINT VERSUS APPROVED INFRASTRUCTURE

Coppabella Wind Farm

- Turbine locations - Approved
- - Overhead Reticulation - Approved
- - Underground Reticulation - Approved
- ⊠ Batch Plants and Construction Compounds - Approved
- ⊠ Switchyards and Substations - Approved
- - 132kV Powerline - Approved
- - Access Tracks - Approved
- Modified Construction Footprint
- ⊠ Wind Farm Project Boundary



Notes:
- Approved Infrastructure provided by Epuron, received June 2016
- Aerial imagery courtesy of Epuron 2012

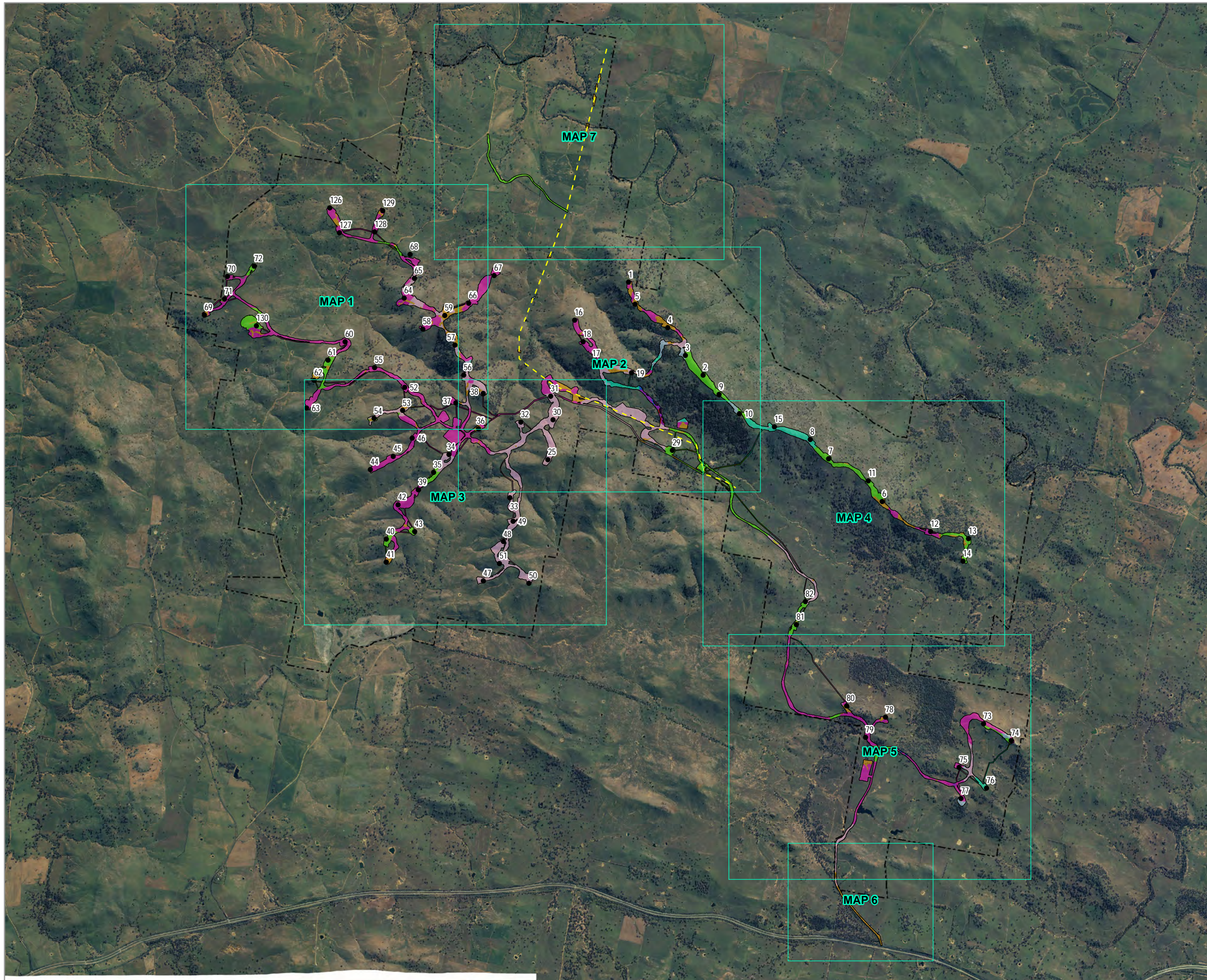


A3 @ 1:50000
Ref: Coppabella Wind Farm -
Modified Construction Footprint versus
Approved Infrastructure
Author: TH

FINAL DESIGN JUNE 2017 -
OVERVIEW MAP

Coppabella Wind Farm

- Detailed Map Extents
 - 132kV Powerline
 - Turbine locations
 - Modified Construction Footprint
- Vegetation Type**
- Box-Gum woodland - Low
 - Box-Gum woodland - Moderate to good (high)
 - Box-Gum woodland - Moderate to good (low)
 - Box-Gum woodland derived grassland - Low
 - Box-Gum woodland derived grassland - Moderate to good (high)
 - Box-Gum woodland derived grassland - Moderate to good (low)
 - Long-leaved Box dry forest - Moderate to good (high)
 - Long-leaved Box dry forest - Moderate to good (low)
 - Long-leaved Box dry forest derived grassland - Moderate to good (low)
 - Riparian - Moderate to good (low)
 - Exotic - NA
- Wind Farm Project Boundary



Notes:
 - Design data courtesy of Goldwind, received May 2017
 - Aerial imagery courtesy of Epuron 2012

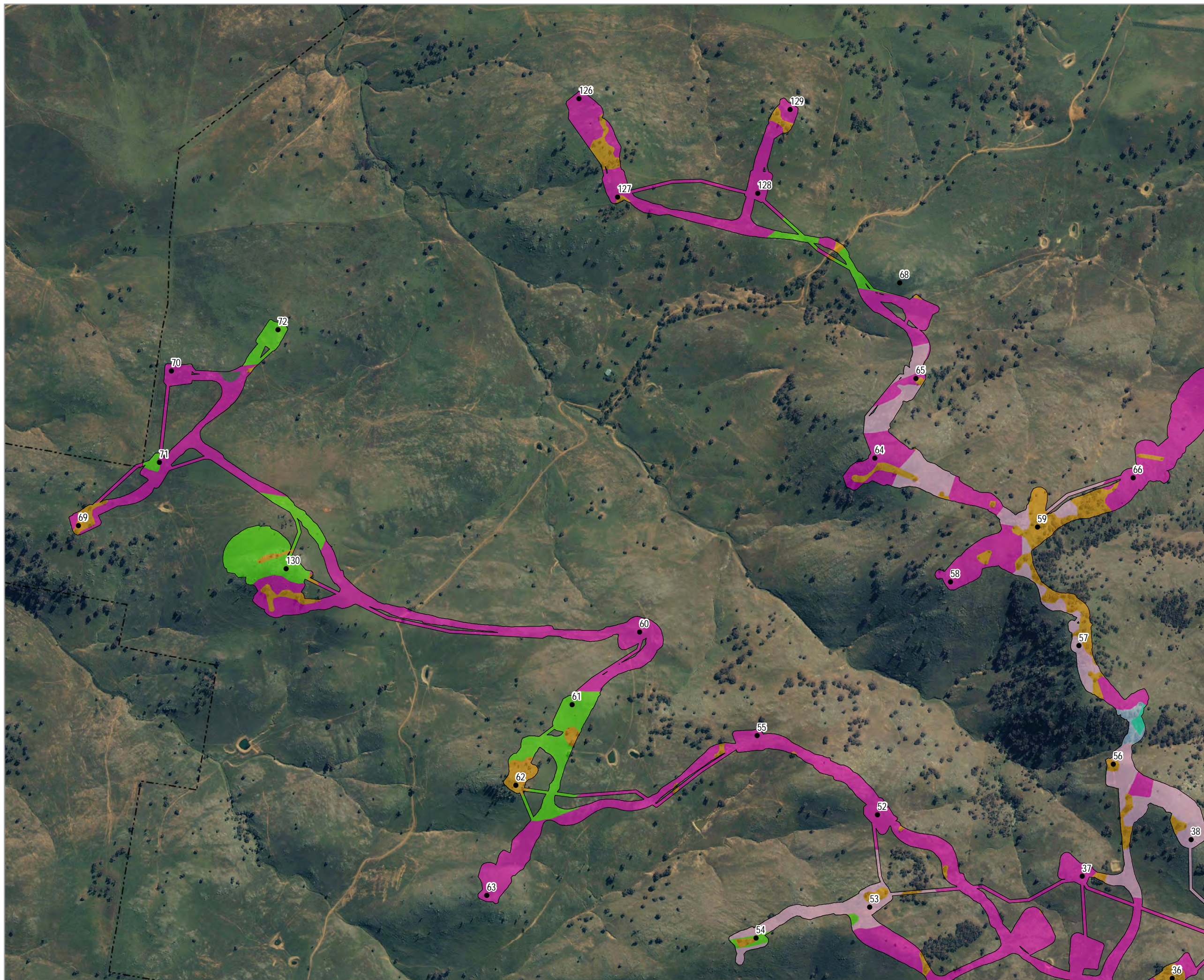


A3 @ 1:50000
 Ref: Coppabella Wind Farm -
 Final Design June 2017 Overview
 Author: TH

FINAL DESIGN JUNE 2017 -
DETAILED MAP 1

Coppabella Wind Farm

- Turbine locations
- - - 132kV Powerline
- Modified Construction Footprint
- Vegetation Type**
- Box-Gum woodland - Low
- Box-Gum woodland - Moderate to good (high)
- Box-Gum woodland - Moderate to good (low)
- Box-Gum woodland derived grassland - Low
- Box-Gum woodland derived grassland - Moderate to good (high)
- Box-Gum woodland derived grassland - Moderate to good (low)
- Long-leaved Box dry forest - Moderate to good (high)
- Long-leaved Box dry forest - Moderate to good (low)
- Long-leaved Box dry forest derived grassland - Moderate to good (low)
- Riparian - Moderate to good (low)
- Exotic - NA
- ⋮ Wind Farm Project Boundary



Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012

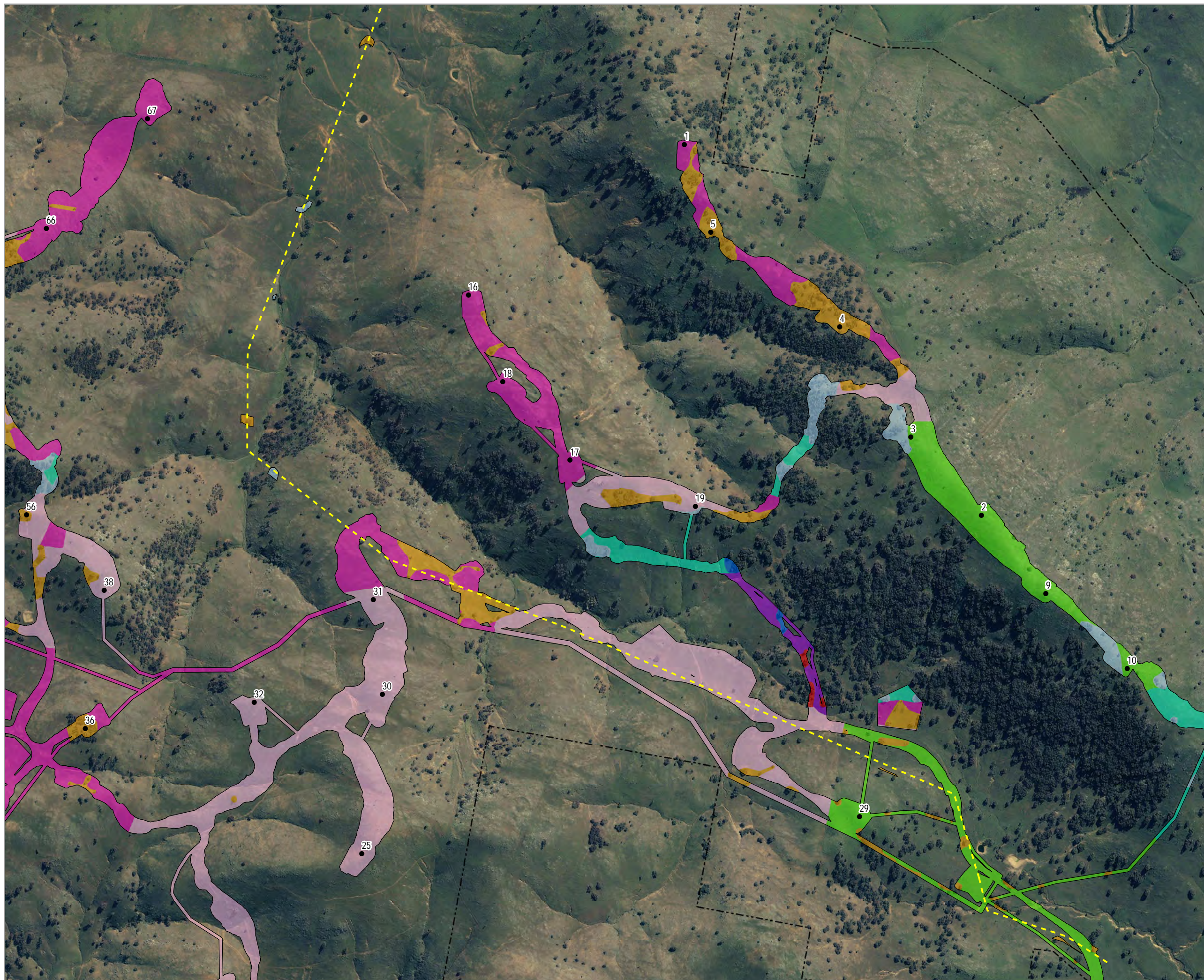


A3 @ 1:12500
Ref: Coppabella Wind Farm -
Final Design June 2017 Detailed
Author: TH



Coppabella Wind Farm

- Turbine locations
- - - 132kV Powerline
- Modified Construction Footprint
- Vegetation Type**
- Box-Gum woodland - Low
- Box-Gum woodland - Moderate to good (high)
- Box-Gum woodland - Moderate to good (low)
- Box-Gum woodland derived grassland - Low
- Box-Gum woodland derived grassland - Moderate to good (high)
- Box-Gum woodland derived grassland - Moderate to good (low)
- Long-leaved Box dry forest - Moderate to good (high)
- Long-leaved Box dry forest - Moderate to good (low)
- Long-leaved Box dry forest derived grassland - Moderate to good (low)
- Riparian - Moderate to good (low)
- Exotic - NA
- ⋮ Wind Farm Project Boundary

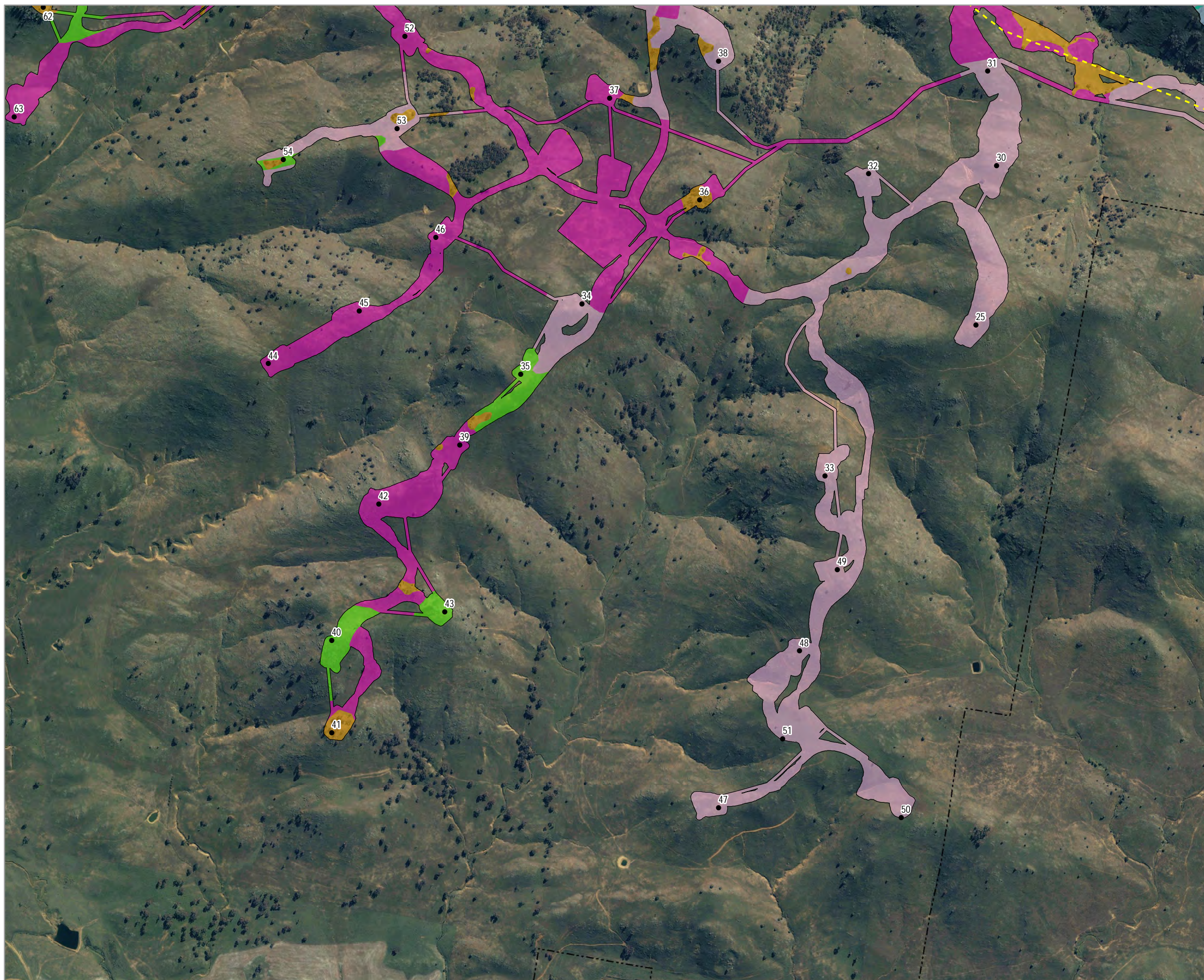


Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:12500
Ref: Coppabella Wind Farm -
Final Design June 2017 Detailed
Author: TH

Coppabella Wind Farm



- Turbine locations
- - - 132kV Powerline
- Modified Construction Footprint
- Vegetation Type**
- Box-Gum woodland - Low
- Box-Gum woodland - Moderate to good (high)
- Box-Gum woodland - Moderate to good (low)
- Box-Gum woodland derived grassland - Low
- Box-Gum woodland derived grassland - Moderate to good (high)
- Box-Gum woodland derived grassland - Moderate to good (low)
- Long-leaved Box dry forest - Moderate to good (high)
- Long-leaved Box dry forest - Moderate to good (low)
- Long-leaved Box dry forest derived grassland - Moderate to good (low)
- Riparian - Moderate to good (low)
- Exotic - NA
- ⌞ Wind Farm Project Boundary

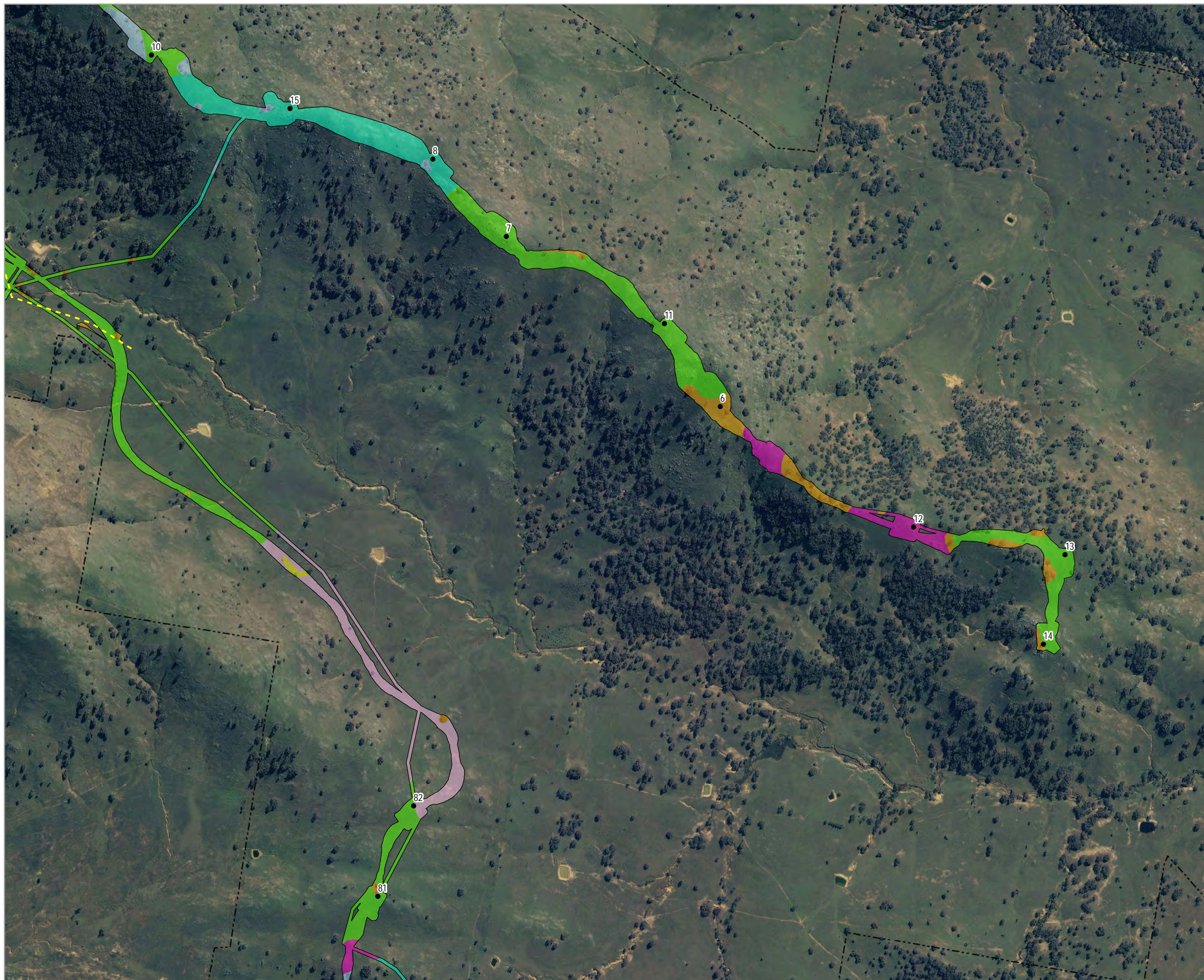
Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:12500
Ref: Coppabella Wind Farm -
Final Design June 2017 Detailed
Author: TH

Coppabella Wind Farm

- Turbine locations
- - - 132kV Powerline
- Modified Construction Footprint
- Vegetation Type**
- Box-Gum woodland - Low
- Box-Gum woodland - Moderate to good (high)
- Box-Gum woodland - Moderate to good (low)
- Box-Gum woodland derived grassland - Low
- Box-Gum woodland derived grassland - Moderate to good (high)
- Box-Gum woodland derived grassland - Moderate to good (low)
- Long-leaved Box dry forest - Moderate to good (high)
- Long-leaved Box dry forest - Moderate to good (low)
- Long-leaved Box dry forest derived grassland - Moderate to good (low)
- Riparian - Moderate to good (low)
- Exotic - NA
- ⋮ Wind Farm Project Boundary



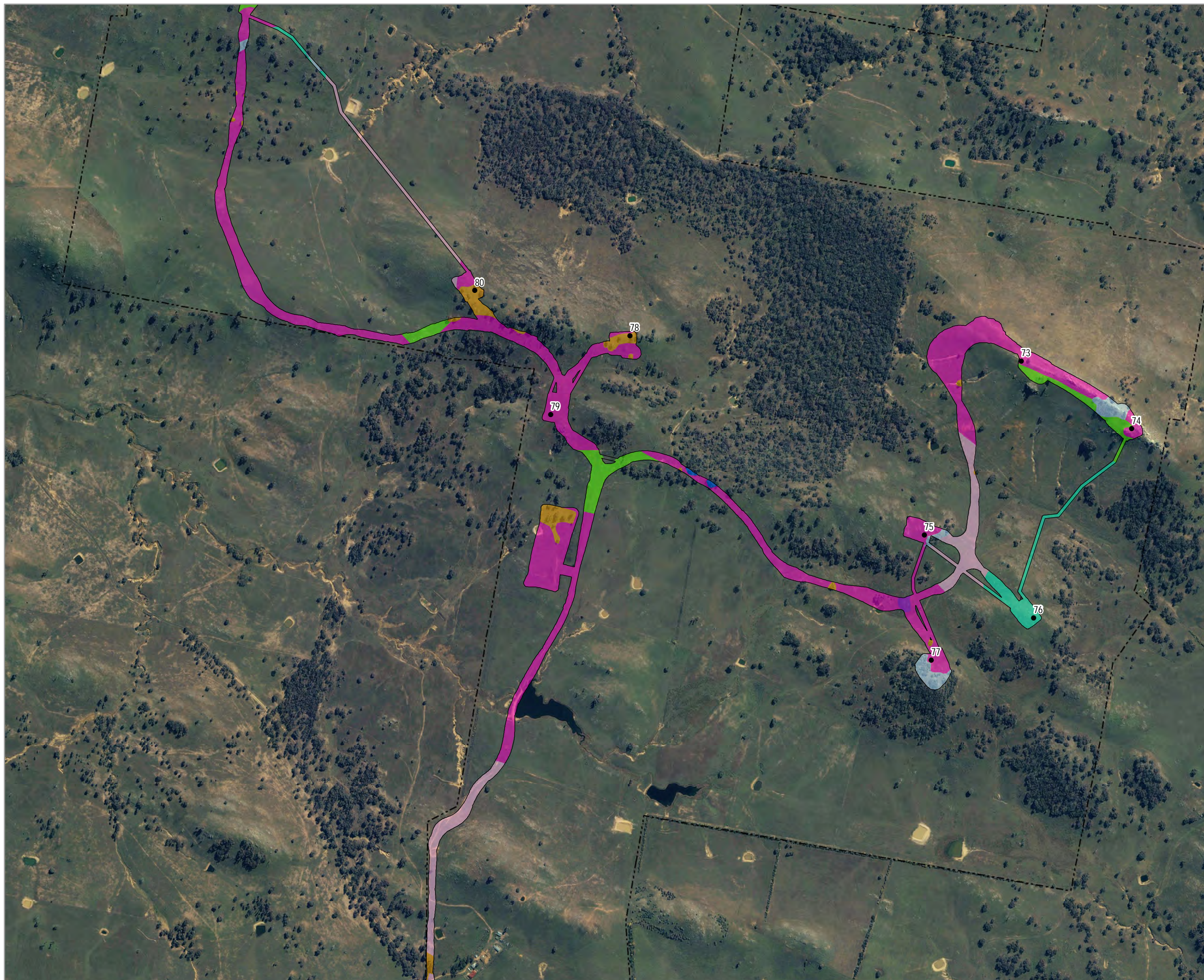
Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:12500
Ref: Coppabella Wind Farm -
Final Design June 2017 Detailed
Author: TH

Coppabella Wind Farm

- Turbine locations
- - 132kV Powerline
- Modified Construction Footprint
- Vegetation Type**
- Box-Gum woodland - Low
- Box-Gum woodland - Moderate to good (high)
- Box-Gum woodland - Moderate to good (low)
- Box-Gum woodland derived grassland - Low
- Box-Gum woodland derived grassland - Moderate to good (high)
- Box-Gum woodland derived grassland - Moderate to good (low)
- Long-leaved Box dry forest - Moderate to good (high)
- Long-leaved Box dry forest - Moderate to good (low)
- Long-leaved Box dry forest derived grassland - Moderate to good (low)
- Riparian - Moderate to good (low)
- Exotic - NA
- ⋮ Wind Farm Project Boundary



Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



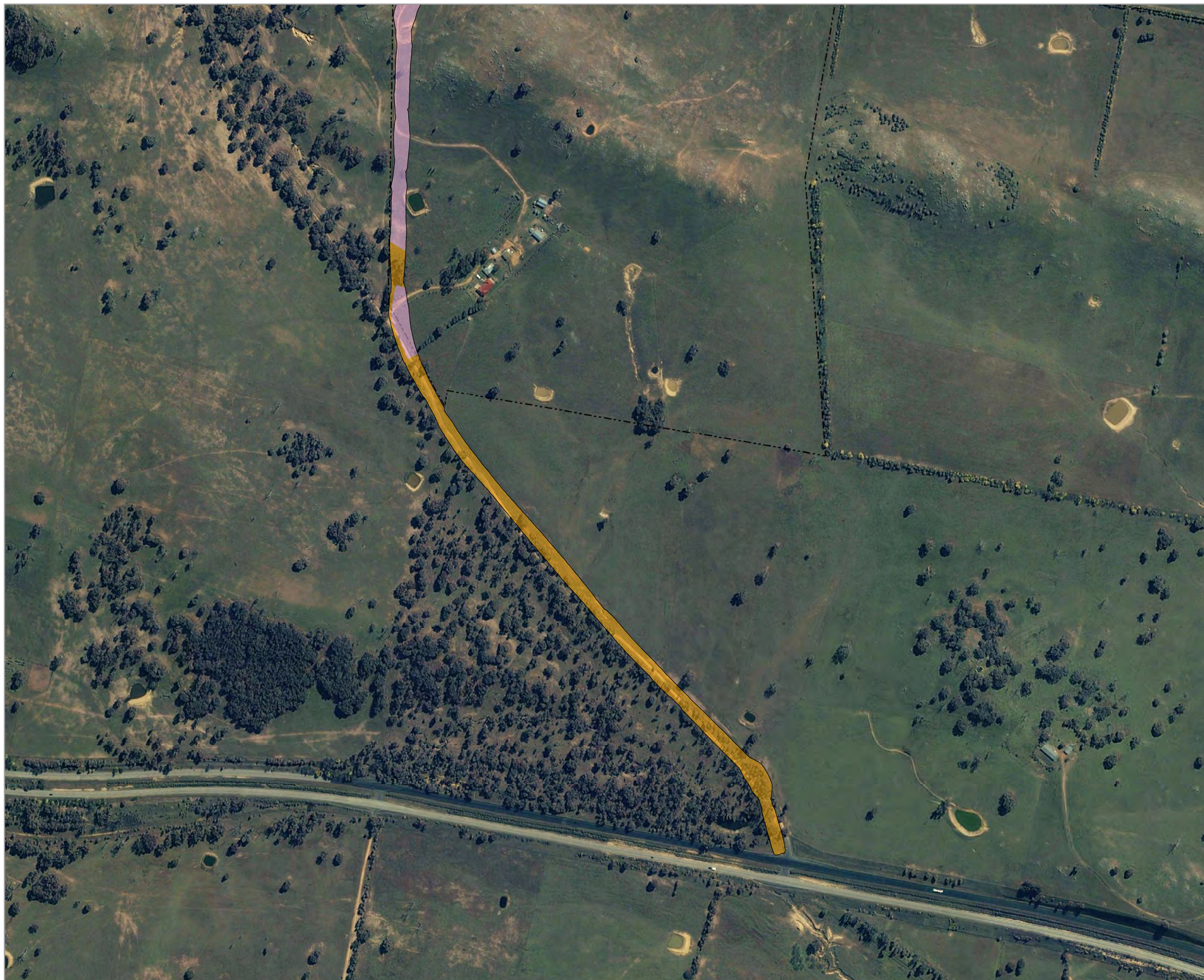
A3 @ 1:12500
Ref: Coppabella Wind Farm -
Final Design June 2017 Detailed
Author: TH

Coppabella Wind Farm

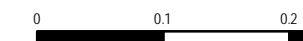
- Turbine locations
- - 132kV Powerline
- Modified Construction Footprint

Vegetation Type

- Box-Gum woodland - Low
- Box-Gum woodland - Moderate to good (high)
- Box-Gum woodland - Moderate to good (low)
- Box-Gum woodland derived grassland - Low
- Box-Gum woodland derived grassland - Moderate to good (high)
- Box-Gum woodland derived grassland - Moderate to good (low)
- Long-leaved Box dry forest - Moderate to good (high)
- Long-leaved Box dry forest - Moderate to good (low)
- Long-leaved Box dry forest derived grassland - Moderate to good (low)
- Riparian - Moderate to good (low)
- Exotic - NA
- Wind Farm Project Boundary



Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:6000
Ref: Coppabella Wind Farm -
Final Design June 2017 Detailed
Author: TH

Coppabella Wind Farm

- Turbine locations
- - - 132kV Powerline
- Modified Construction Footprint
- Vegetation Type**
- Box-Gum woodland - Low
- Box-Gum woodland - Moderate to good (high)
- Box-Gum woodland - Moderate to good (low)
- Box-Gum woodland derived grassland - Low
- Box-Gum woodland derived grassland - Moderate to good (high)
- Box-Gum woodland derived grassland - Moderate to good (low)
- Long-leaved Box dry forest - Moderate to good (high)
- Long-leaved Box dry forest - Moderate to good (low)
- Long-leaved Box dry forest derived grassland - Moderate to good (low)
- Riparian - Moderate to good (low)
- Exotic - NA
- ⋮ Wind Farm Project Boundary



Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



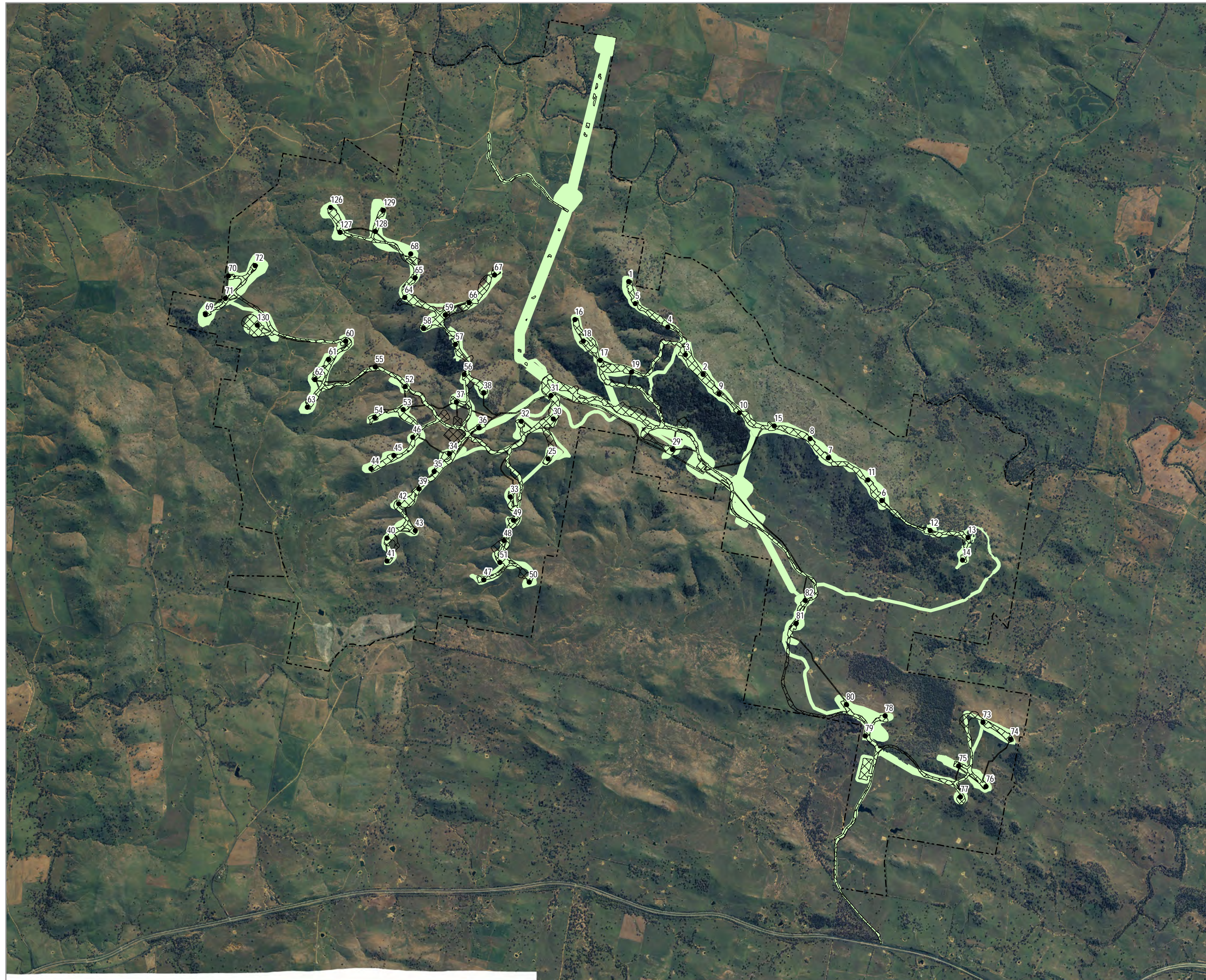
A3 @ 1:12500
Ref: Coppabella Wind Farm -
Final Design June 2017 Detailed
Author: TH

A.3 APPROVED INFRASTRUCTURE CORRIDOR VERSUS MODIFIED PROJECT

MODIFIED CONSTRUCTION FOOTPRINT
VERSUS APPROVED DEVELOPMENT
ENVELOPE

Coppabella Wind Farm

- Turbine locations
- ⊠ Modified Construction Footprint
- Approved Development Envelope
- ⋮ Wind Farm Project Boundary



Notes:
- Approved Development Envelope provided by Epuron, received June 2016
- Aerial imagery courtesy of Epuron 2012

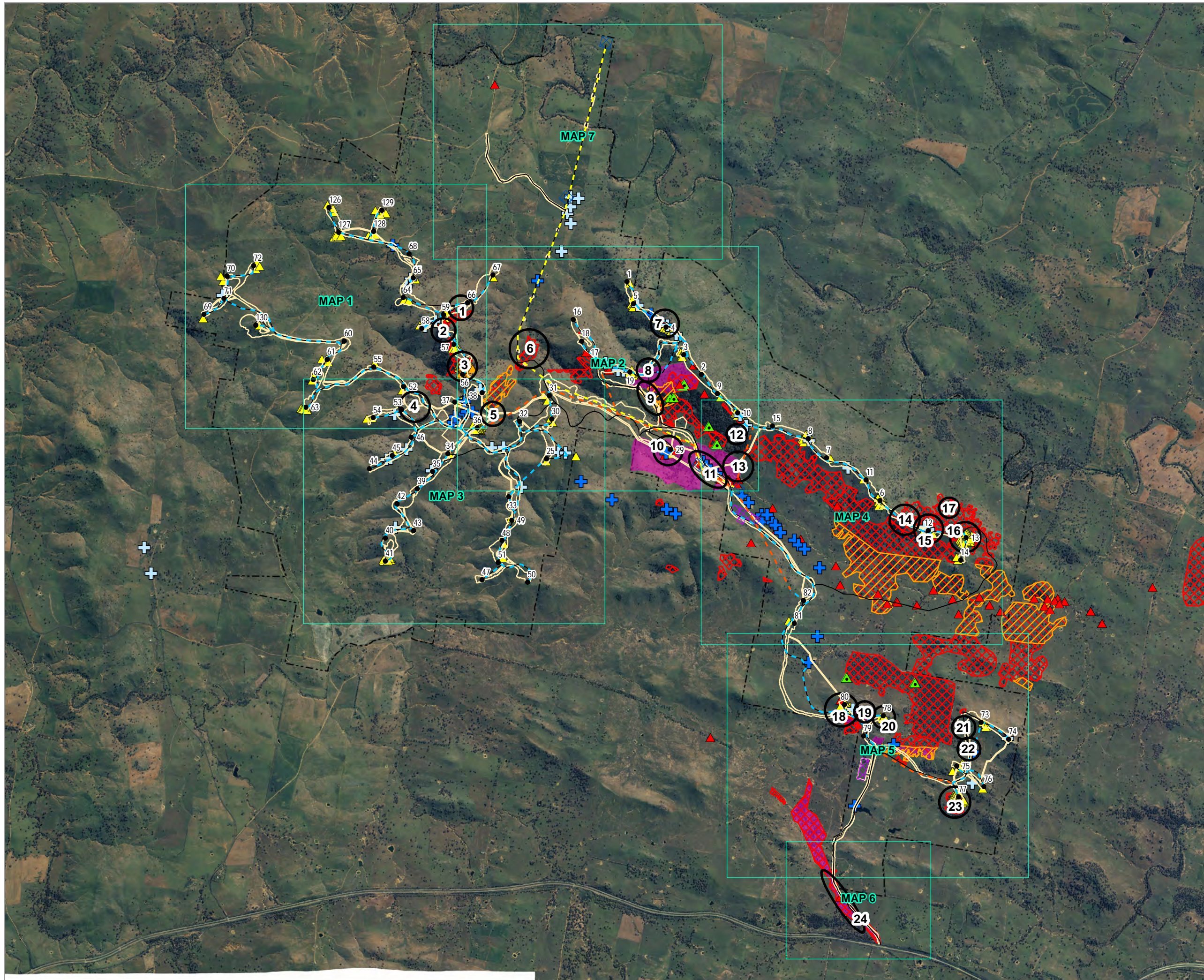


A3 @ 1:50000
Ref: Coppabella Wind Farm -
Modified Construction Footprint versus
Approved Development Envelope
Author: TH

A.4 MINIMISATION OF BIODIVERSITY IMPACTS DURING THE DETAILED DESIGN PROCESS (KEY LOCATIONS)

UPDATED BIODIVERSITY AND
ABORIGINAL HERITAGE
OVERVIEW MAP

Coppabella Wind Farm



- ☐ Reference Areas
- Detailed Map Extents
- Turbine locations - Approved
- - Overhead Reticulation - Approved
- - Underground Reticulation - Approved
- - 132kV Powerline - Approved
- - Access Tracks - Approved
- ⊠ Batch Plants and Construction Compounds - Approved
- ⊠ Switchyards and Substations - Approved
- Modified Construction Footprint
- Previously identified biodiversity high constraints
- ▲ Hollow-bearing trees (HBTs)
- ▲ Yass Daisy records
- ⊠ Moderate to good condition (NGH classes) woodland EEC
- Additional biodiversity high constraints
- ▲ Potential HBTs based on field DBH assessment
- ▲ Desktop HBT assessment (PAC Submission)
- Important Superb Parrot Habitat (Coppabella BA)
- Moderate to Good Condition (NGH classes) Woodland EEC (Based on validated vegetation mapping)
- ⊠ EPBC listed Box-Gum woodland CEEC
- Aboriginal heritage constraints*
- ⊕ Verh high constraint
- ⊕ High constraint
- ⊠ Wind Farm Project Boundary

* Note Aboriginal site data is in point form and sites may extend beyond these areas

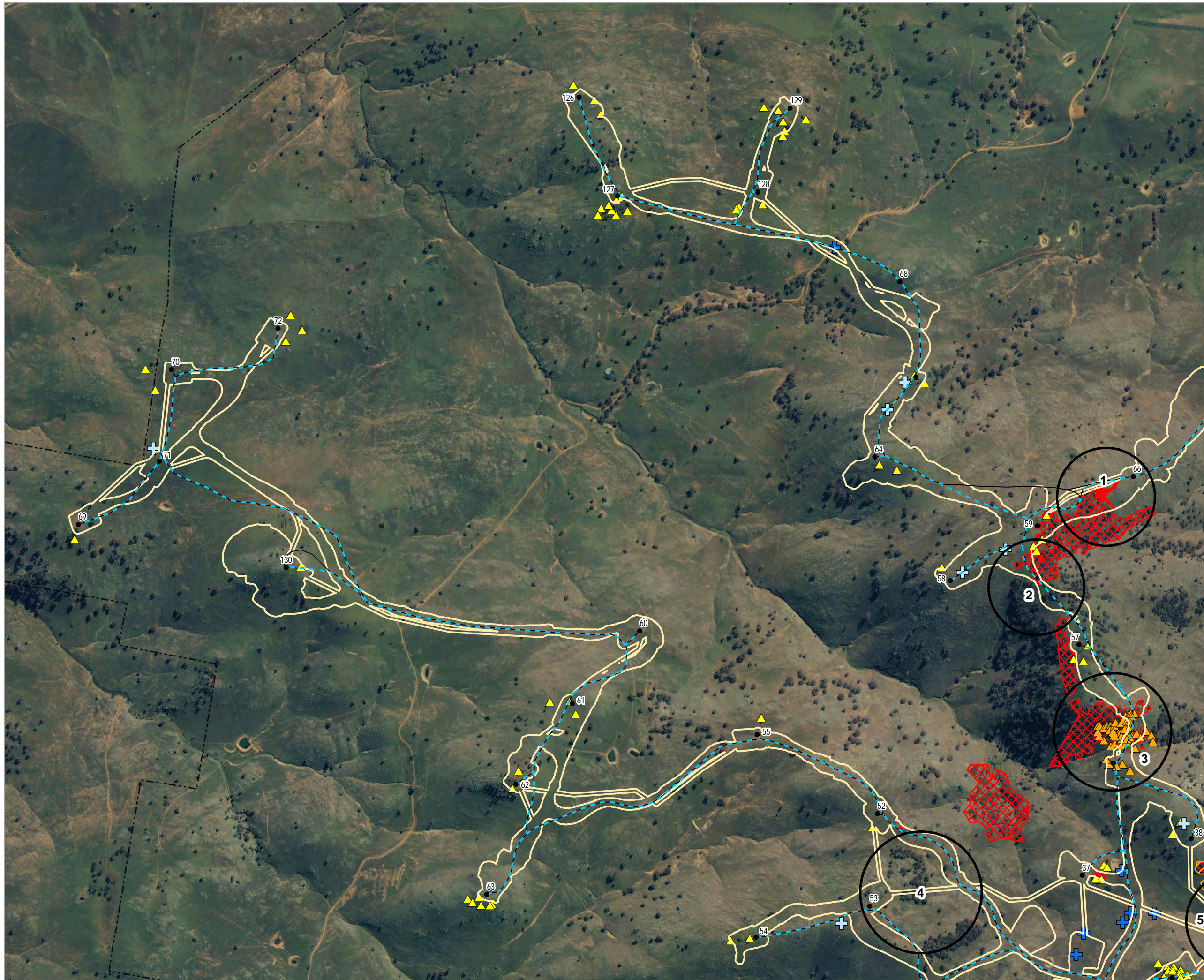
Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:50000
Ref: Coppabella Wind Farm - Updated Biodiversity and Aboriginal Heritage Overview
Author: TH

UPDATED BIODIVERSITY AND
ABORIGINAL HERITAGE
DETAILED MAP 1

Coppabella Wind Farm



- Reference Areas
- Turbine locations - Approved
- - Overhead Reticulation - Approved
- - Underground Reticulation - Approved
- - 132kV Powerline - Approved
- Access Tracks - Approved
- ▨ Batch Plants and Construction Compounds - Approved
- ▨ Switchyards and Substations - Approved
- ▨ Modified Construction Footprint
- Previously identified biodiversity high constraints
- ▲ Hollow-bearing trees (HBTs)
- ▲ Yass Daisy records
- ▨ Moderate to good condition (NGH classes) woodland EEC
- Additional biodiversity high constraints
- ▲ Potential HBTs based on field DBH assessment
- ▲ Desktop HBT assessment (PAC Submission)
- ▨ Important Superb Parrot Habitat (Coppabella BA)
- ▨ Moderate to Good Condition (NGH classes) Woodland EEC (Based on validated vegetation mapping)
- ▨ EPBC listed Box-Gum woodland CEEC
- Aboriginal heritage constraints*
- ⊕ Verh high constraint
- ⊕ High constraint
- ⊕ Wind Farm Project Boundary

* Note Aboriginal site data is in point form and sites may extend beyond these areas

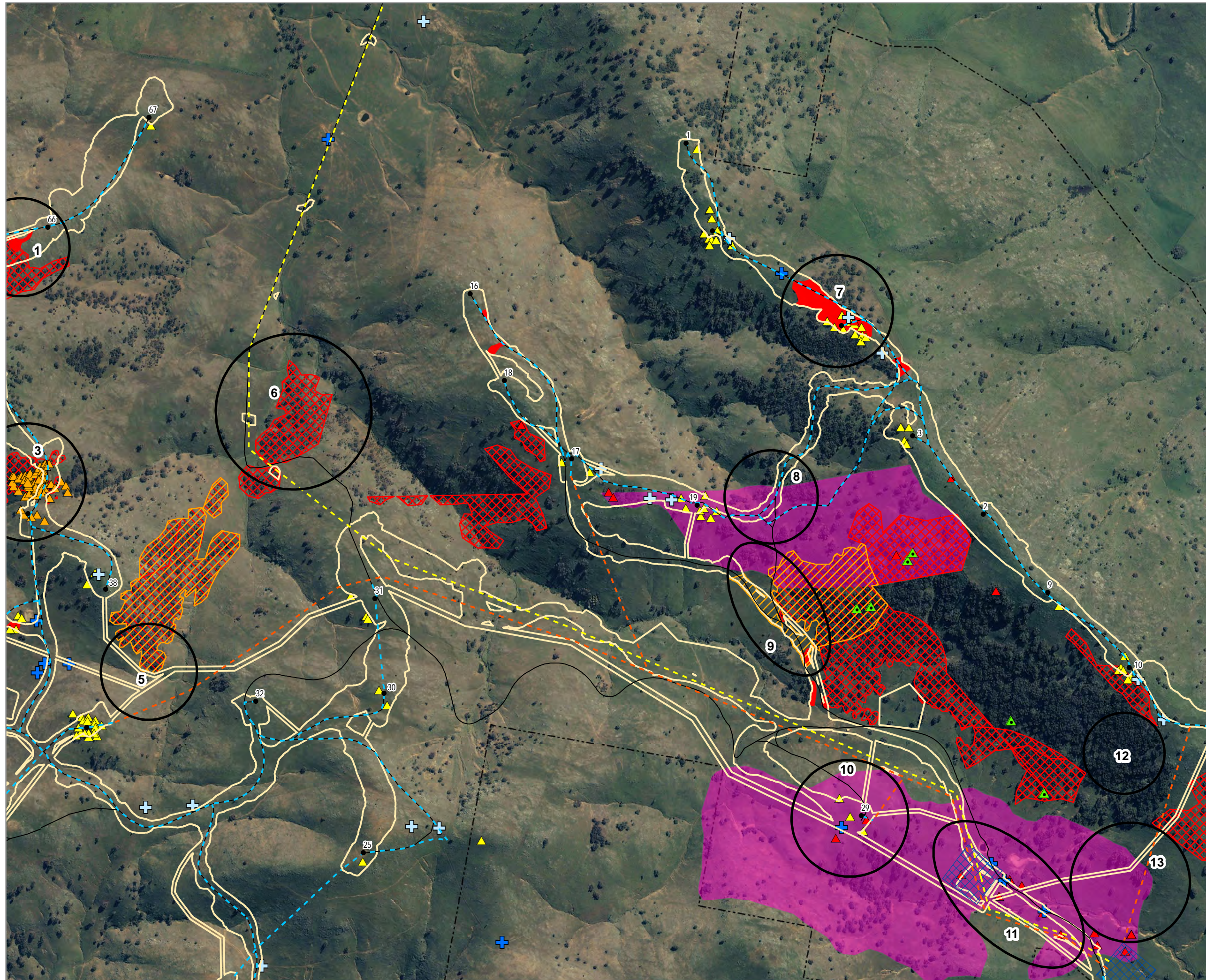
Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:12500
Ref: Coppabella Wind Farm - Updated Biodiversity and Aboriginal Heritage Detailed
Author: TH

UPDATED BIODIVERSITY AND
ABORIGINAL HERITAGE
DETAILED MAP 2

Coppabella Wind Farm



- Reference Areas
- Turbine locations - Approved
- - Overhead Reticulation - Approved
- - Underground Reticulation - Approved
- - 132kV Powerline - Approved
- - Access Tracks - Approved
- ⊠ Batch Plants and Construction Compounds - Approved
- ⊠ Switchyards and Substations - Approved
- ⊠ Modified Construction Footprint
- Previously identified biodiversity high constraints
- ▲ Hollow-bearing trees (HBTS)
- ▲ Yass Daisy records
- ⊠ Moderate to good condition (NGH classes) woodland EEC
- Additional biodiversity high constraints
- ▲ Potential HBTs based on field DBH assessment
- ▲ Desktop HBT assessment (PAC Submission)
- Important Superb Parrot Habitat (Coppabella BA)
- Moderate to Good Condition (NGH classes) Woodland EEC (Based on validated vegetation mapping)
- ⊠ EPBC listed Box-Gum woodland CEEC
- Aboriginal heritage constraints*
- ⊠ Verh high constraint
- ⊠ High constraint
- ⊠ Wind Farm Project Boundary

* Note Aboriginal site data is in point form and sites may extend beyond these areas

Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:12500
Ref: Coppabella Wind Farm - Updated Biodiversity and Aboriginal Heritage Detailed
Author: TH

UPDATED BIODIVERSITY AND
ABORIGINAL HERITAGE
DETAILED MAP 3

Coppabella Wind Farm



- Reference Areas
- Turbine locations - Approved
- - Overhead Reticulation - Approved
- - Underground Reticulation - Approved
- - 132kV Powerline - Approved
- - Access Tracks - Approved
- ⊠ Batch Plants and Construction Compounds - Approved
- ⊠ Switchyards and Substations - Approved
- ⊠ Modified Construction Footprint
- Previously identified biodiversity high constraints
- ▲ Hollow-bearing trees (HBTS)
- ▲ Yass Daisy records
- ⊠ Moderate to good condition (NGH classes) woodland EEC
- Additional biodiversity high constraints
- ▲ Potential HBTS based on field DBH assessment
- ▲ Desktop HBT assessment (PAC Submission)
- Important Superb Parrot Habitat (Coppabella BA)
- Moderate to Good Condition (NGH classes) Woodland EEC (Based on validated vegetation mapping)
- ⊠ EPBC listed Box-Gum woodland CEEC
- Aboriginal heritage constraints*
- ⊠ Verh high constraint
- ⊠ High constraint
- ⊠ Wind Farm Project Boundary

* Note Aboriginal site data is in point form and sites may extend beyond these areas

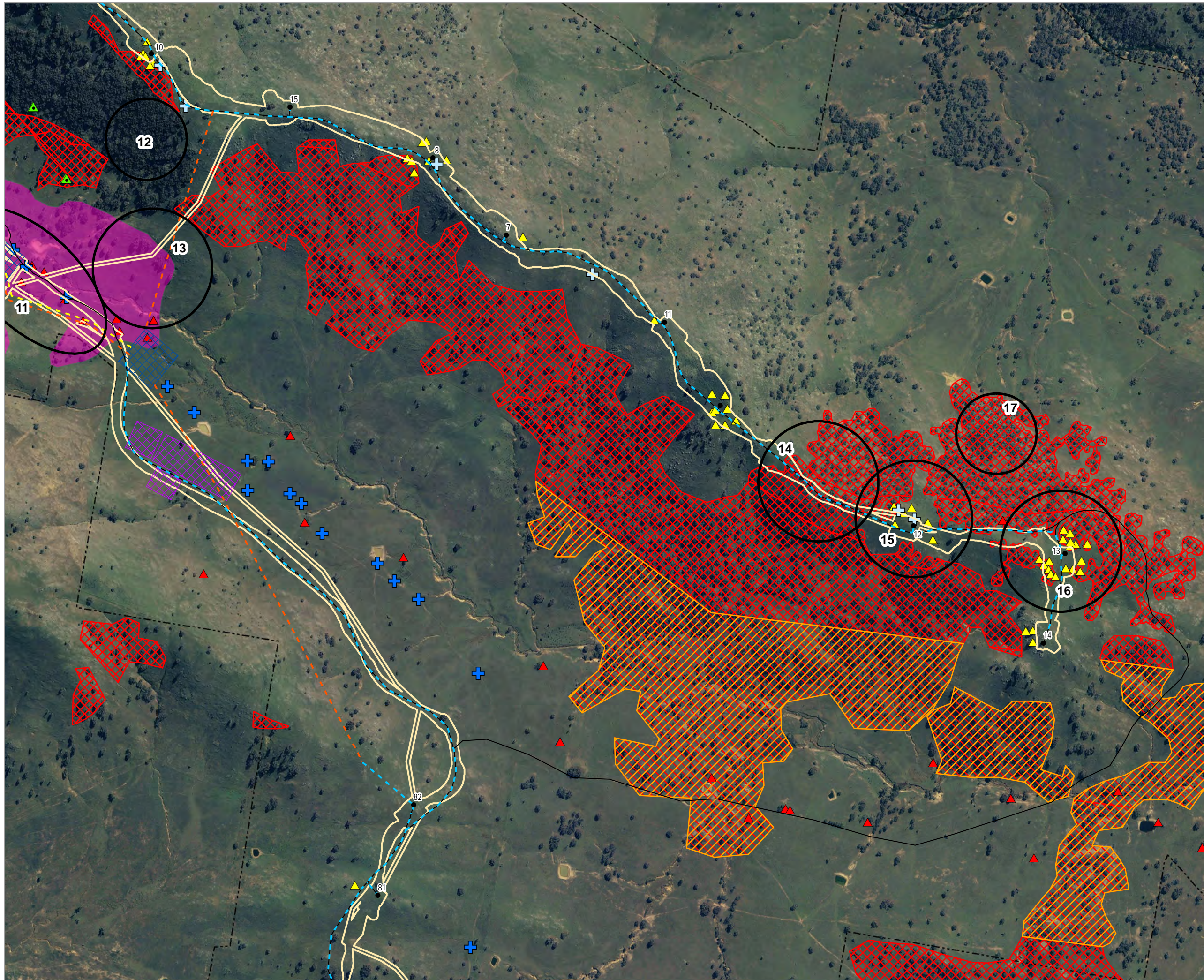
Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:12500
Ref: Coppabella Wind Farm - Updated Biodiversity and Aboriginal Heritage Detailed
Author: TH

UPDATED BIODIVERSITY AND
ABORIGINAL HERITAGE
DETAILED MAP 4

Coppabella Wind Farm



- Reference Areas
- Turbine locations - Approved
- - Overhead Reticulation - Approved
- - Underground Reticulation - Approved
- - 132kV Powerline - Approved
- - Access Tracks - Approved
- ⊠ Batch Plants and Construction Compounds - Approved
- ⊠ Switchyards and Substations - Approved
- Modified Construction Footprint
- Previously identified biodiversity high constraints
- ▲ Hollow-bearing trees (HBTS)
- ▲ Yass Daisy records
- ⊠ Moderate to good condition (NGH classes) woodland EEC
- Additional biodiversity high constraints
- ▲ Potential HBTs based on field DBH assessment
- ▲ Desktop HBT assessment (PAC Submission)
- Important Superb Parrot Habitat (Coppabella BA)
- Moderate to Good Condition (NGH classes) Woodland EEC (Based on validated vegetation mapping)
- ⊠ EPBC listed Box-Gum woodland CEEC
- Aboriginal heritage constraints*
- ⊠ Verh high constraint
- ⊠ High constraint
- ⊠ Wind Farm Project Boundary

* Note Aboriginal site data is in point form and sites may extend beyond these areas

Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:12500
Ref: Coppabella Wind Farm - Updated Biodiversity and Aboriginal Heritage Detailed
Author: TH

UPDATED BIODIVERSITY AND
ABORIGINAL HERITAGE
DETAILED MAP 5

Coppabella Wind Farm



- Reference Areas
- Turbine locations - Approved
- - Overhead Reticulation - Approved
- - Underground Reticulation - Approved
- - 132kV Powerline - Approved
- - Access Tracks - Approved
- ▨ Batch Plants and Construction Compounds - Approved
- ▨ Switchyards and Substations - Approved
- ▨ Modified Construction Footprint
- Previously identified biodiversity high constraints
- ▲ Hollow-bearing trees (HBTs)
- ▲ Yass Daisy records
- ▨ Moderate to good condition (NGH classes) woodland EEC
- Additional biodiversity high constraints
- ▲ Potential HBTs based on field DBH assessment
- ▲ Desktop HBT assessment (PAC Submission)
- ▨ Important Superb Parrot Habitat (Coppabella BA)
- ▨ Moderate to Good Condition (NGH classes) Woodland EEC (Based on validated vegetation mapping)
- ▨ EPBC listed Box-Gum woodland CEEC
- Aboriginal heritage constraints*
- ⊕ Verh high constraint
- ⊕ High constraint
- ▨ Wind Farm Project Boundary

* Note Aboriginal site data is in point form and sites may extend beyond these areas

Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:12500
Ref: Coppabella Wind Farm - Updated Biodiversity and Aboriginal Heritage Detailed
Author: TH



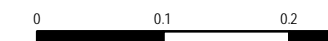
UPDATED BIODIVERSITY AND
ABORIGINAL HERITAGE
DETAILED MAP 6

Coppabella Wind Farm

- ☐ Reference Areas
- Turbine locations - Approved
- - Overhead Reticulation - Approved
- - Underground Reticulation - Approved
- - 132kV Powerline - Approved
- - Access Tracks - Approved
- ⊠ Batch Plants and Construction Compounds - Approved
- ⊠ Switchyards and Substations - Approved
- ☐ Modified Construction Footprint
- Previously identified biodiversity high constraints
- ▲ Hollow-bearing trees (HBTS)
- ▲ Yass Daisy records
- ⊠ Moderate to good condition (NGH classes) woodland EEC
- Additional biodiversity high constraints
- ▲ Potential HBTs based on field DBH assessment
- ▲ Desktop HBT assessment (PAC Submission)
- Important Superb Parrot Habitat (Coppabella BA)
- Moderate to Good Condition (NGH classes) Woodland EEC (Based on validated vegetation mapping)
- ⊠ EPBC listed Box-Gum woodland CEEC
- Aboriginal heritage constraints*
- ⊕ Verh high constraint
- ⊕ High constraint
- ⊠ Wind Farm Project Boundary

* Note Aboriginal site data is in point form and sites may extend beyond these areas

Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:6000
Ref: Coppabella Wind Farm - Updated Biodiversity and Aboriginal Heritage Detailed
Author: TH

UPDATED BIODIVERSITY AND
ABORIGINAL HERITAGE
DETAILED MAP 7

Coppabella Wind Farm



- Reference Areas
- Turbine locations - Approved
- - Overhead Reticulation - Approved
- - Underground Reticulation - Approved
- - 132kV Powerline - Approved
- Access Tracks - Approved
- ⊠ Batch Plants and Construction Compounds - Approved
- ⊠ Switchyards and Substations - Approved
- Modified Construction Footprint
- Previously identified biodiversity high constraints
- ▲ Hollow-bearing trees (HBTS)
- ▲ Yass Daisy records
- ⊠ Moderate to good condition (NGH classes) woodland EEC
- Additional biodiversity high constraints
- ▲ Potential HBTs based on field DBH assessment
- ▲ Desktop HBT assessment (PAC Submission)
- Important Superb Parrot Habitat (Coppabella BA)
- Moderate to Good Condition (NGH classes) Woodland EEC (Based on validated vegetation mapping)
- ⊠ EPBC listed Box-Gum woodland CEEC
- Aboriginal heritage constraints*
- ⊕ Verh high constraint
- ⊕ High constraint
- ⊠ Wind Farm Project Boundary

* Note Aboriginal site data is in point form and sites may extend beyond these areas

Notes:
- Design data courtesy of Goldwind, received May 2017
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:12500
Ref: Coppabella Wind Farm - Updated Biodiversity and Aboriginal Heritage Detailed
Author: TH

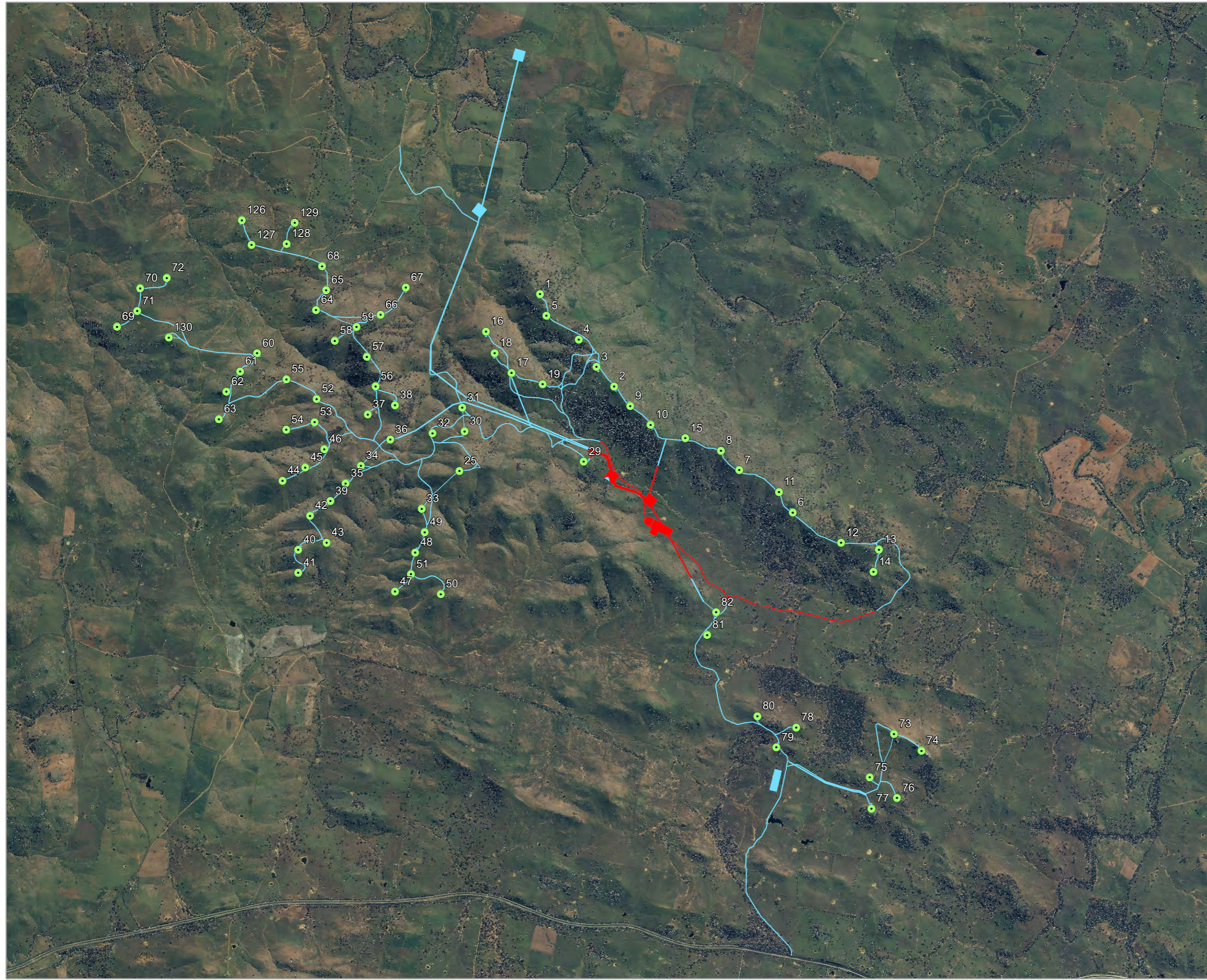
A.5 COPPABELLA, MARILBA AND THE 330KV GRID CONNECTION PRECINCTS

The Yass Valley Wind Farm proposal included clearing estimates for five separate precincts: Coppabella, Marilba (east and west), Conroy's Extension and the 330kV Grid Connection (identified as 'Transmission') to connect the wind farm south. When only the Coppabella precinct was consented, the clearing allowance omitted some infrastructure elements required for this precinct. This was due to the assignment of these infrastructure elements to the Transmission 330kv Grid Connection precinct in the project's GIS files. Refer to Appendix A, Map A.5. This result is that the clearing limit in Condition 19 does not include the additional 18 ha of Box Gum Woodland required to construct the Coppabella precinct.

Red areas shown are those required for the Coppabella precinct but not included in the clearing allowance due to their assignment to the 330kV grid connection precinct. The additional amount totals 18 ha of Box Gum Woodland

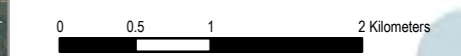
**YASS VALLEY WIND FARM
APPROVED IMPACT AREAS
RELEVANT TO THE COPPABELLA
PRECINCT**

Coppabella Wind Farm



- Approved turbines/hardstands
- Approved Coppabella precinct (83.0 ha)
- Infrastructure assigned to the transmission line precinct required for Coppabella but not included in the approval (18.1 ha)

Notes:
- Precinct data prepared by Epuron March 2015
- Aerial imagery courtesy of Epuron 2012



A3 @ 1:50000
Ref: 16-440
Author: DM

APPENDIX B SPECIALIST ASSESSMENTS

B.1 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

B.2 SHADOW FLICKER ANALYSIS

B.3 OPERATIONAL NOISE ASSESSMENT

B.4 HOLLOW BEARING TREE SURVEY JULY 2017

B.5 OPERATIONAL BIRD AND BAT IMPACT ASSESSMENT

B.6 BIODIVERSITY OFFSET STRATEGY – SUPPORTING DOCUMENTS

Biobanking credit calculations

Areas being investigated for offsets

B.7 INDIGENOUS HERITAGE ASSESSMENT

B.8 AVIATION IMPACT ASSESSMENT

B.9 TELECOMMUNICATIONS ASSESSMENTS