



Supporting Bushfire Risk Management with LGmap

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Business Development Officer (LGmap)

LGmap is using  Platform developed by *Fluffy Software Pty Ltd*

The GeolICE logo features the word 'GeolICE' in green and orange, with 'Rapid Mapping' in small text below it.

LGmap – sector specific information and mapping platform with



- Capabilities to increase efficiencies in meeting regulatory requirements for Local Government activities via early identification of matters requiring further investigations via unique reporting functions
- Over 300 regularly updated data layers in one place relevant to a wide range of Local Government operations – more time to focus on project specifics rather than up-to-date data collection
- Mapping capability for non GIS users allowing to plan avoidance of impacts and undertake monitoring/record keeping

WALGA
WORKING FOR LOCAL GOVERNMENT

LGmap

User

Password

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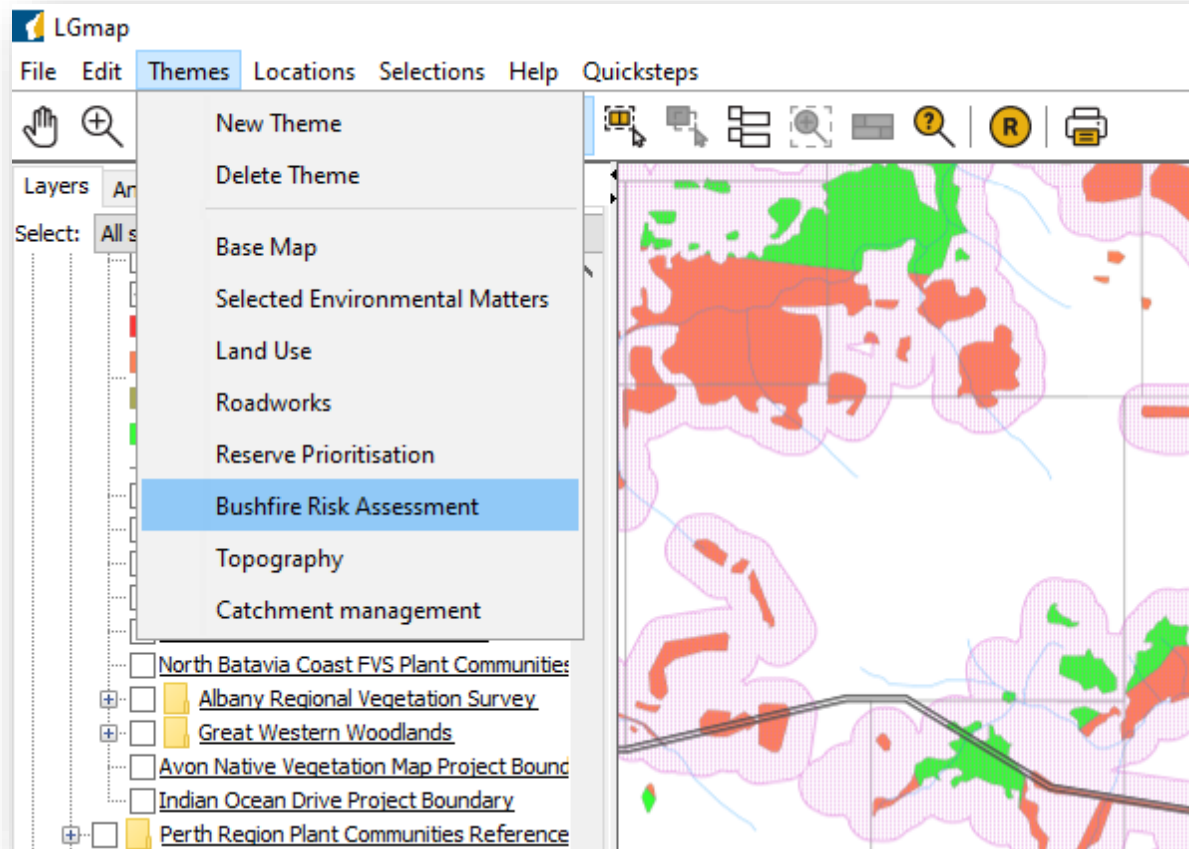
How LGmap assists bushfire risk management?



- Inform Bushfire Risk Management Plans by access to data such as vegetation types, records of threatened species and communities, wetlands, Bushfire Prone Areas, land use, fire history and more
- Level 1 and Level 2 BAL screening and assessment:
 - Undertake vegetation classification for bushfire risk assessment
 - Rapid generation of BAL contours and BHL mapping – enabling easy verification of assessments or scenario modelling, subdivision and strategic planning
- Mapping capabilities to facilitate updates of the Bushfire Prone Areas mapping layer, recording fire history, bushfire risk management treatments or assets
- View or add Local Government specific mapping data

Easy mapping layer identification

Use THEMES to automatically turn on layers most relevant to bushfire risk assessment

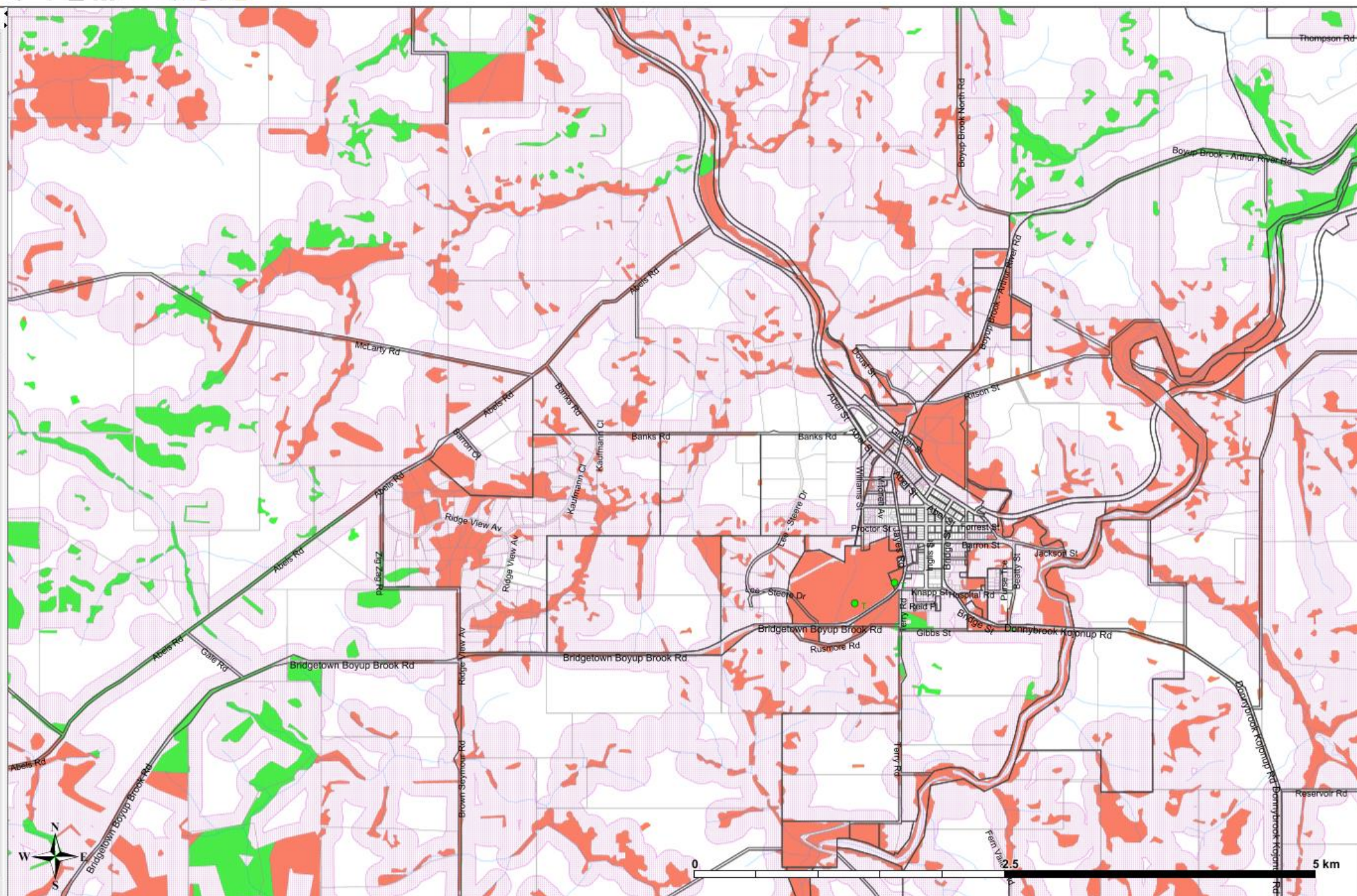




Layers Annotation Sets Web Maps

- Select: All selectable layers
- ☐ Remnant Vegetation by Beard Association
 - ☒ Remnant Vegetation by Beard Association
 - < 10% remaining in IBRA region
 - 10 - 30% remaining in IBRA region
 - 30 - 40% remaining in IBRA region
 - > 40% remaining in IBRA region
 - ☐ Remnant Vegetation by Beard Association I
 - ☐ Vegetation Complexes (DBCA, 2016)
 - ☐ Vegetation Complexes (PBP, 2010)
 - ☐ Administrative Planning Categories
 - ☐ Geraldton RFVS Plant Communities
 - ☐ North Batavia Coast FVS Plant Communities
 - ☐ Albany Regional Vegetation Survey
 - ☐ Great Western Woodlands
 - ☐ Avon Native Vegetation Map Project Bound
 - ☐ Indian Ocean Drive Project Boundary
 - ☐ Perth Region Plant Communities Reference
 - ☐ Roadside Conservation
 - ☐ Urban Forest
 - ☒ Surface Water
 - ☐ Groundwater
 - ☐ Ecological Linkages / Connectivity
 - ☐ Policy and Development Control Boundaries
 - ☐ Priorities for Further Investigation
 - ☒ Additional Considerations
 - ☐ Geology
 - ☐ Landscape Character Types
 - ☐ Coastal Landforms
 - ☐ Soil-landscape Mapping
 - ☐ Characteristic Soils of Western Australia
 - ☐ Land Quality
 - ☐ Land Capability
 - ☐ Dieback high confidence infested mapping to 2008
 - ☐ Forest Disease Risk Areas
 - ☐ Acid Sulphate Soil Risk
 - ☐ Contaminated Sites Database
 - ☐ Unexploded Ordnance Potential
 - ☐ Aboriginal and Other Heritage Sites
 - ☒ Fire Risk Assessment
 - ☐ DFES Fire History
 - ☐ DBCA Fire History - last year burnt
 - ☐ DBCA Fire History
 - ☒ Bushfire Prone Areas (OBRM, Sept 2019)
 - ☐ Carbon Farming Initiative Fire Projects
 - ☐ NAFI Fire Frequency (Years Burnt 2000-16)
 - ☐ NAFI Fire History Years Since Burnt (2000-16)

Switch to legend view...



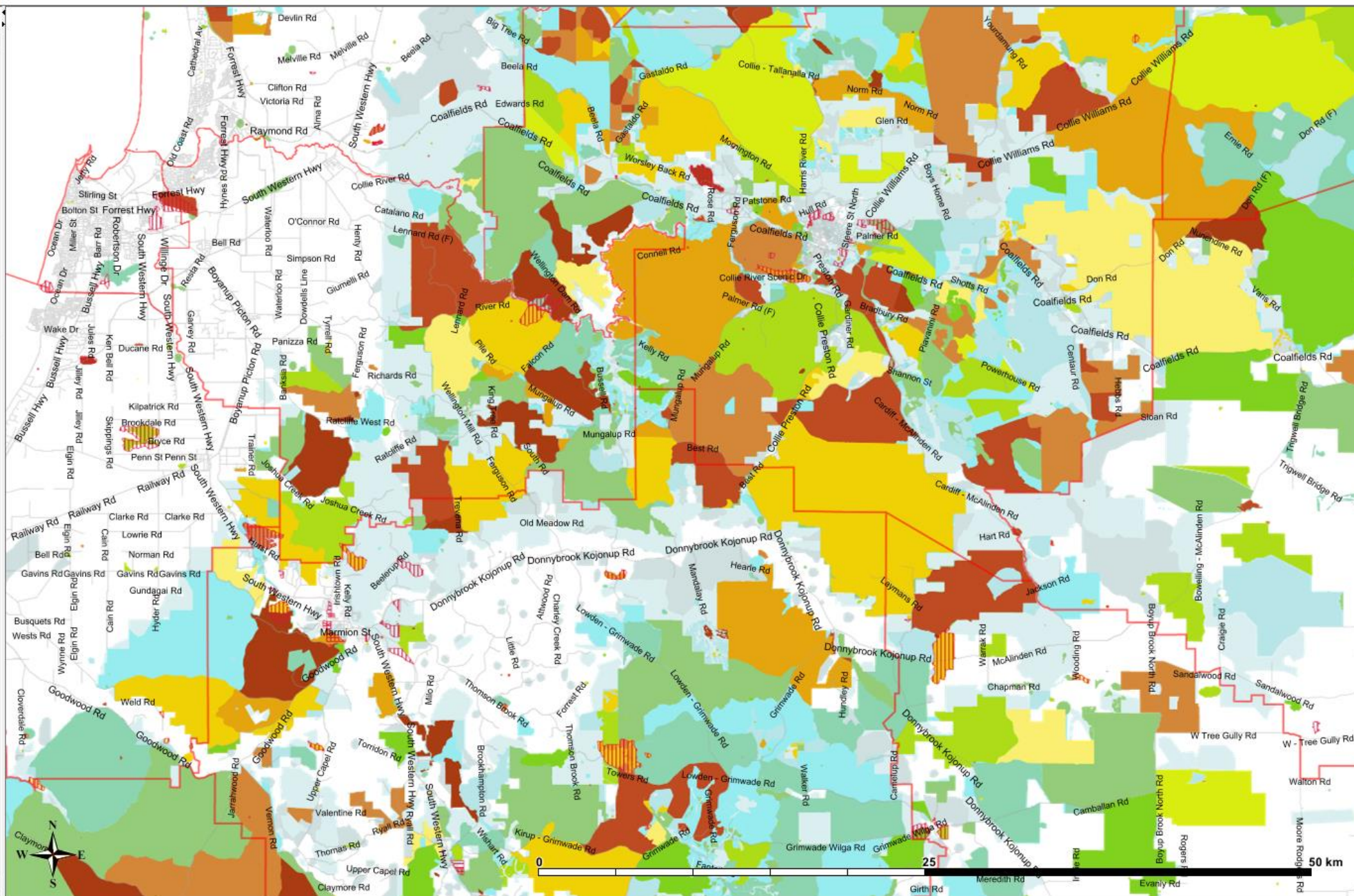


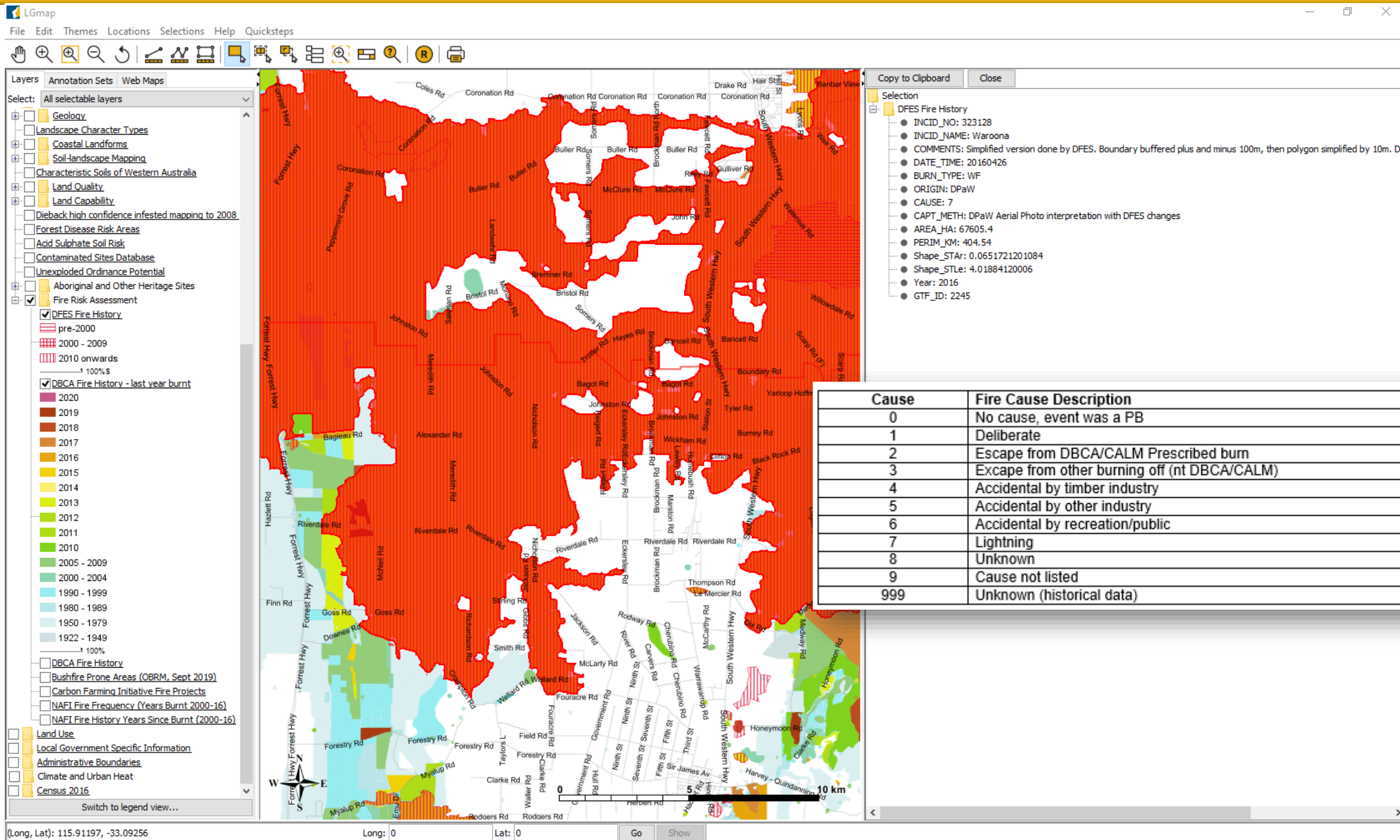
Layers Annotation Sets Web Maps

Select: All selectable layers

- ☐ Geology
- ☐ Landscape Character Types
- ☐ Coastal Landforms
- ☐ Soil-landscape Mapping
- ☐ Characteristic Soils of Western Australia
- ☐ Land Quality
- ☐ Land Capability
- ☐ Dieback high confidence infested mapping to 2008
- ☐ Forest Disease Risk Areas
- ☐ Acid Sulphate Soil Risk
- ☐ Contaminated Sites Database
- ☐ Unexploded Ordnance Potential
- ☐ Aboriginal and Other Heritage Sites
- ☒ Fire Risk Assessment
 - ☒ DFES Fire History
 - ☐ pre-2000
 - ☐ 2000 - 2009
 - ☐ 2010 onwards
 - ☒ DBCA Fire History - last year burnt
 - ☐ 2020
 - ☐ 2019
 - ☐ 2018
 - ☐ 2017
 - ☐ 2016
 - ☐ 2015
 - ☐ 2014
 - ☐ 2013
 - ☐ 2012
 - ☐ 2011
 - ☐ 2010
 - ☐ 2005 - 2009
 - ☐ 2000 - 2004
 - ☐ 1990 - 1999
 - ☐ 1980 - 1989
 - ☐ 1950 - 1979
 - ☐ 1922 - 1949
- ☐ DBCA Fire History
- ☐ Bushfire Prone Areas (OBRM, Sept 2019)
- ☐ Carbon Farming Initiative Fire Projects
- ☐ NAFI Fire Frequency (Years Burnt 2000-16)
- ☐ NAFI Fire History Years Since Burnt (2000-16)
- ☐ Land Use
- ☐ Local Government Specific Information
- ☐ Administrative Boundaries
- ☐ Climate and Urban Heat
- ☐ Census 2016

Switch to legend view...







Layers Annotation Sets Web Maps

Legend

Place Names

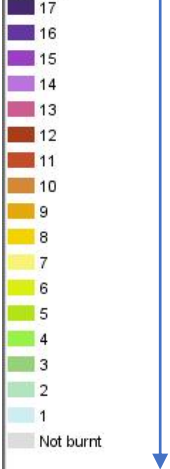
Crown Reserves

DBCA Managed Lands and Waters

- Legislated Lands and Waters
- Lands of Interest

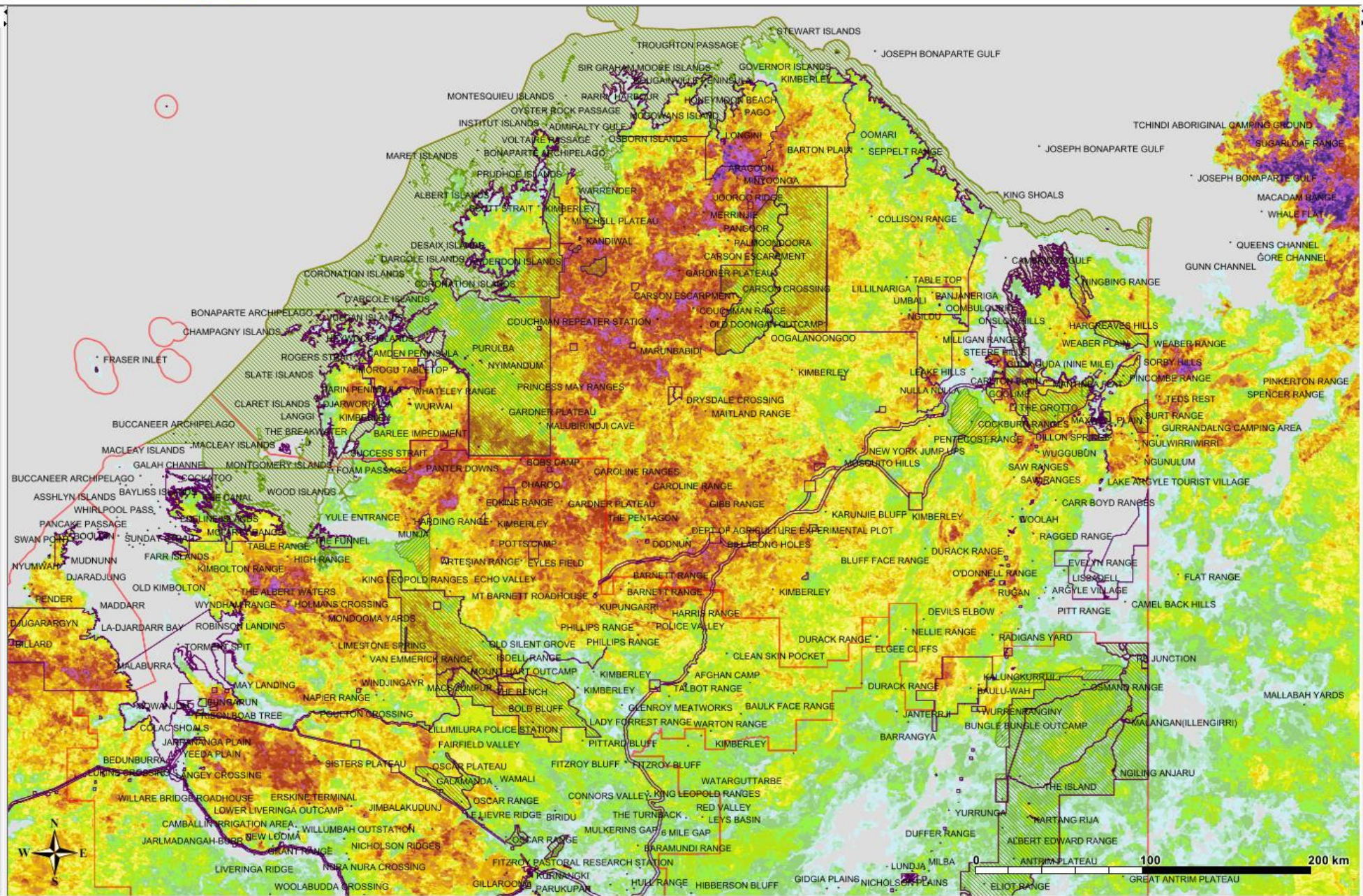
Local Government Authority

NAFI Fire Frequency (Years Burnt 2000-16)



NAFI – North Australia and Rangelands Fire Information

Switch to layer select view...



Access to information informing vegetation type identification/description

- Vegetation height for Perth and Peel and surrounds
- Perth and surrounds plant community reference sites

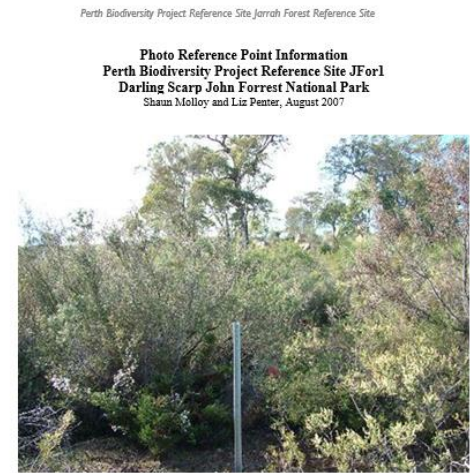
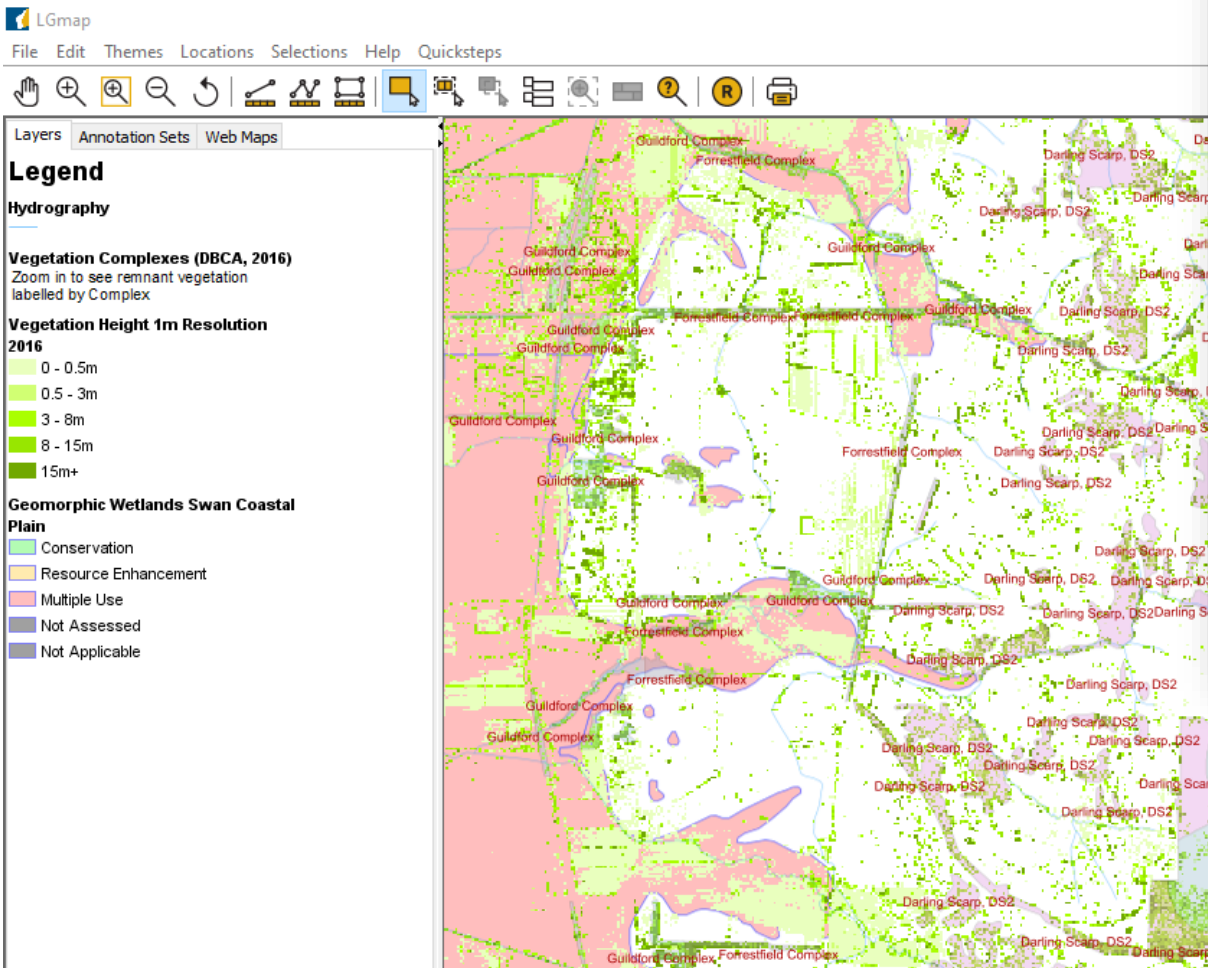


Photo Reference Point	JFor1
Position	31.43.52.5 116.09.30.2
Date of Assessment	14/8/2007
Photo by	Shaun Molloy
Representative of EVS	R4
Vegetation Complex (Havel and Mattiske 2000)	Darling Scarp (DS)
Structural description	Closed shrubland, <i>Leptospermum erubescens</i> , <i>Grevillea endlicheriana</i> , <i>Calothamnus quadrifidus</i> , <i>Petrophile biloba</i> , <i>Hakea trifurcata</i> over <i>G. bipinnatifida</i> , <i>Synaphia petiolaris</i> , <i>Hibbertia hypericoides</i> .
Floristic Community Type	2 (Markey 97)
Vegetation Condition (Keighery 1994)	Very Good
Vegetation Condition Notes	Minimal weeds (Pink gladioli, large stand of <i>ayuda</i> nearby) last fire 5 years plus (est.), all strata of vegetation largely intact. Indications of high impact from Western Grey Kangaroo <i>Macropus fuliginosus</i> traffic.
Environmental Geology	Lateritic red clay with shallow sandy duplex near granite outcrops on higher land
Wetland Types	None
Havel vegetation site types	G and R

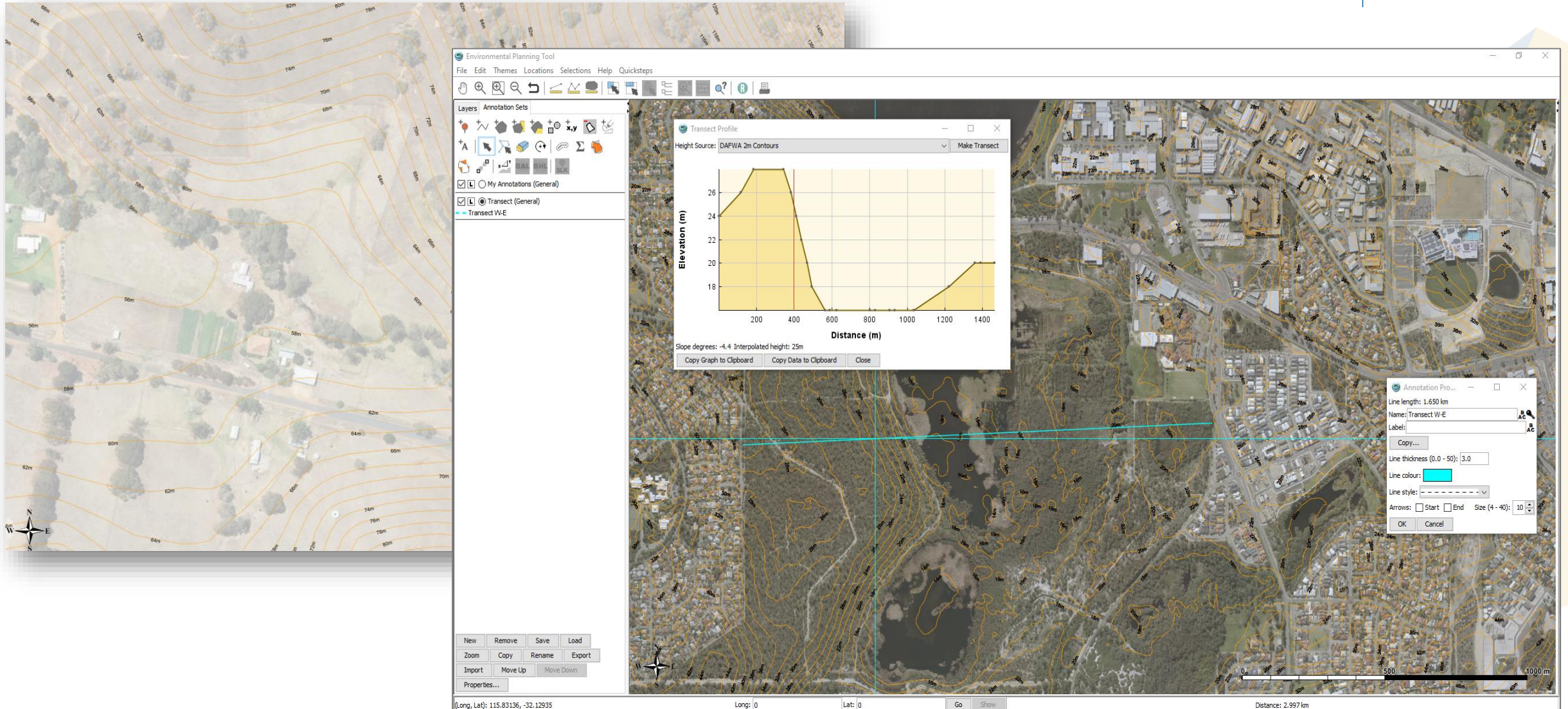
Perth Biodiversity Project Reference Site Jarrah Forest Reference Site

Photo Reference Point Information
Perth Biodiversity Project Reference Site FRB1
FR Berry Reserve Gidgegannup
Shaun Molloy and Liz Penner, August 2007



Photo Reference Point	FRB 1
Position	-31.7313 116.1584
Date of Assessment	14/8/2007
Photo by	Shaun Molloy
Representative of EVS	WM2
Vegetation Complex (Havel and Mattiske 2000)	Murray 2 (My2)
Structural description	Foreground- low shrubland of <i>Xanthorrhoea preissii</i> , <i>Hypocalymma quadrifidus</i> , <i>Leucopogon pulchellus</i> , <i>Grevillea bipinnatifida</i> and <i>Phyllanthus calycinus</i> on shallow duplex soils. Background- medium open woodland of <i>Eucalyptus wandoo</i> , <i>E. accedens</i> , <i>E. calophylla</i> and occasional <i>E. marginata</i> .
Floristic Community Type	N/A
Vegetation Condition (Keighery 1994)	Very Good
Vegetation Condition Notes	Minimal weeds (Pink gladioli, and Guildford grass) last fire 7 years plus (est.), all strata of vegetation intact. Indications of high impact from Western Grey Kangaroo <i>Macropus fuliginosus</i> traffic.
Environmental Geology	Foreground shallow duplex (sandy loam over red clay with underlying granite) situated on a valley slope with some granite outcrops on higher land. Laterite over red and possibly grey clay under open woodland (background).
Wetland Types	Wooroloo brook is a locally significant water course suffering from moderate salinisation, it is home to native fish and invertebrates.
Havel Vegetation Site Type	R and V

Contours and slope measuring tool





Layers Annotation Sets Web Maps

Legend

Dieback high confidence infested
mapping to 2008 (*Phytophthora
cinnamomi*)



Forest Disease Risk Areas

Disease Risk Area

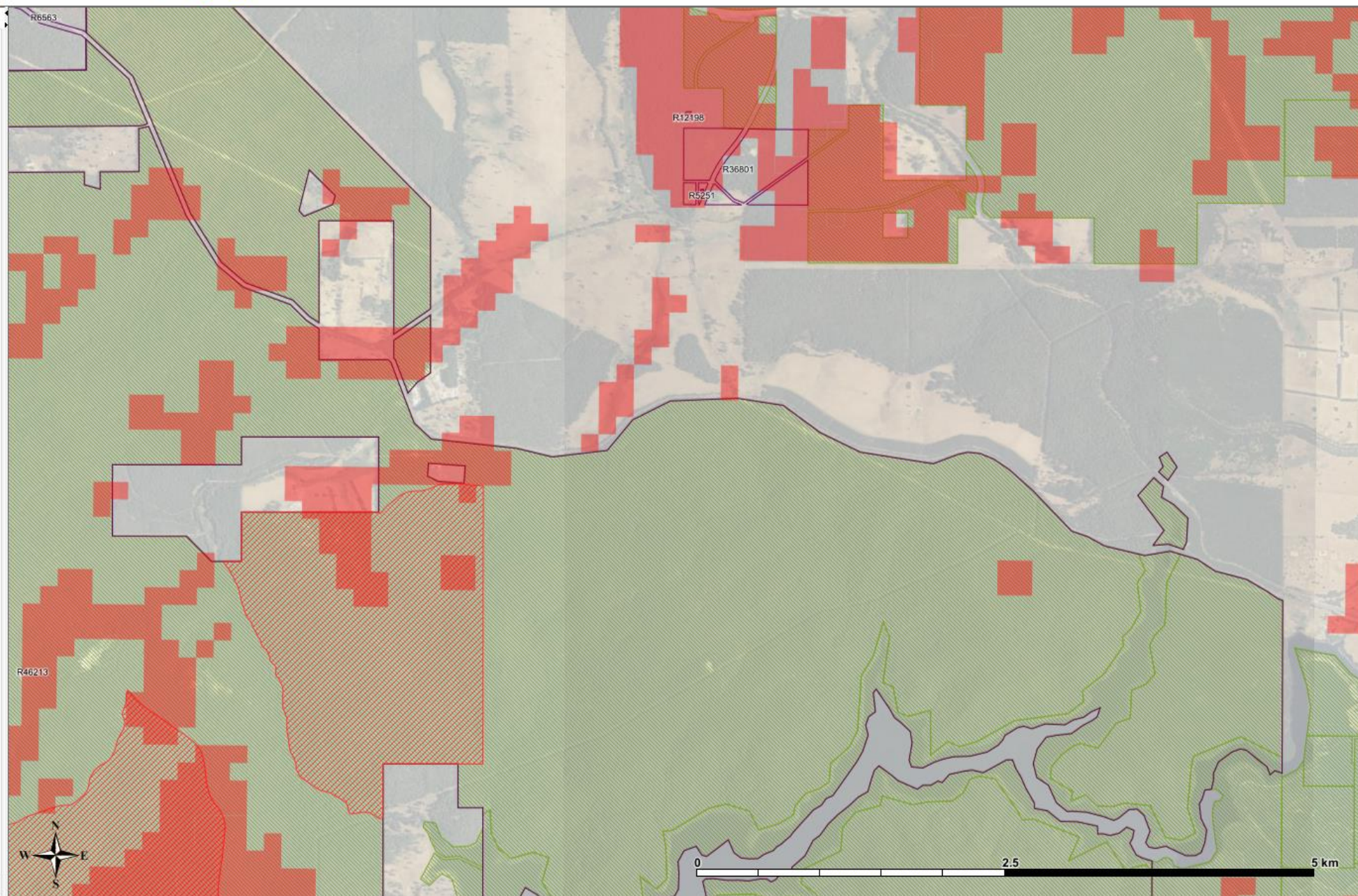
Crown Reserves



DBCA Managed Lands and Waters

Legislated Lands and Waters

Lands of Interest



Switch to layer select view...

(Long, Lat): 115.99137, -33.35625

Long: 0

Lat: 0

Go

Show

How to read this report: Reports shows results only for datasets covering the selected area. The information is listed under headings a the order in which they appear in the report. Absence of threatened flora, fauna and ecological communities records within a selected an additional information.

Environmental Planning Considerations

Report generated: Wed Feb 12 02:32:25 AEDT 2020 by

Reports are generated only for datasets covering the selected area. Absence of threatened flora, fauna and ecological communities recor interpret the datasets in the Explanatory Notes.

[Site Details](#) | [Environmental Considerations](#) | [Priorities for Further Investigation](#) | [Additional Considerations](#) | [Local Government Specific](#)

3 Site Details

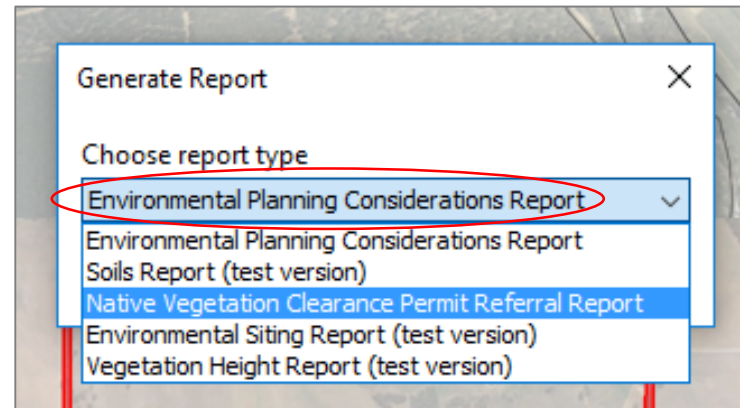
Summary

If any of the listed matters are mapped in or within a defined buffer of the selected area read corresponding section in this report for det as absence of the reported environmental matter. Confirmation may require field survey.

Environmental Matters Requiring Further Investigation	Status
Environmentally Sensitive Area *	No data
Native vegetation **	Yes
Threatened ecological communities - Commonwealth listed	No data
Threatened ecological communities - State listed	No data
Priority ecological communities	No data
Threatened Flora - within the selected area	No data
Threatened Flora - within the buffer of selected area	Yes
Commonwealth Listed Threatened Flora - within the selected area	No data
Commonwealth Listed Threatened Flora - within the buffer of selected area	Yes
Threatened Fauna - within the selected area	No data
Threatened Fauna - within the buffer of selected area	Yes
Commonwealth Listed Threatened Fauna - within the selected area	No data
Commonwealth Listed Threatened Fauna - within the buffer of selected area	Yes
Priority Flora or Fauna - within the selected area	Yes
Priority Flora or Fauna - within the buffer of selected area	Yes
Mapped as potential fauna habitat	Yes
Wetlands	No data
Ecological linkages	No
Adjoining a conservation area	No
Environmental Policy and other relevant matters	Status
Acid Sulfate Soils	No data
EPA Policy Area	No
Public Drinking Water Source Area	No
PDWSA Protection Zone	No
Waterways Conservation Act Management Areas	No

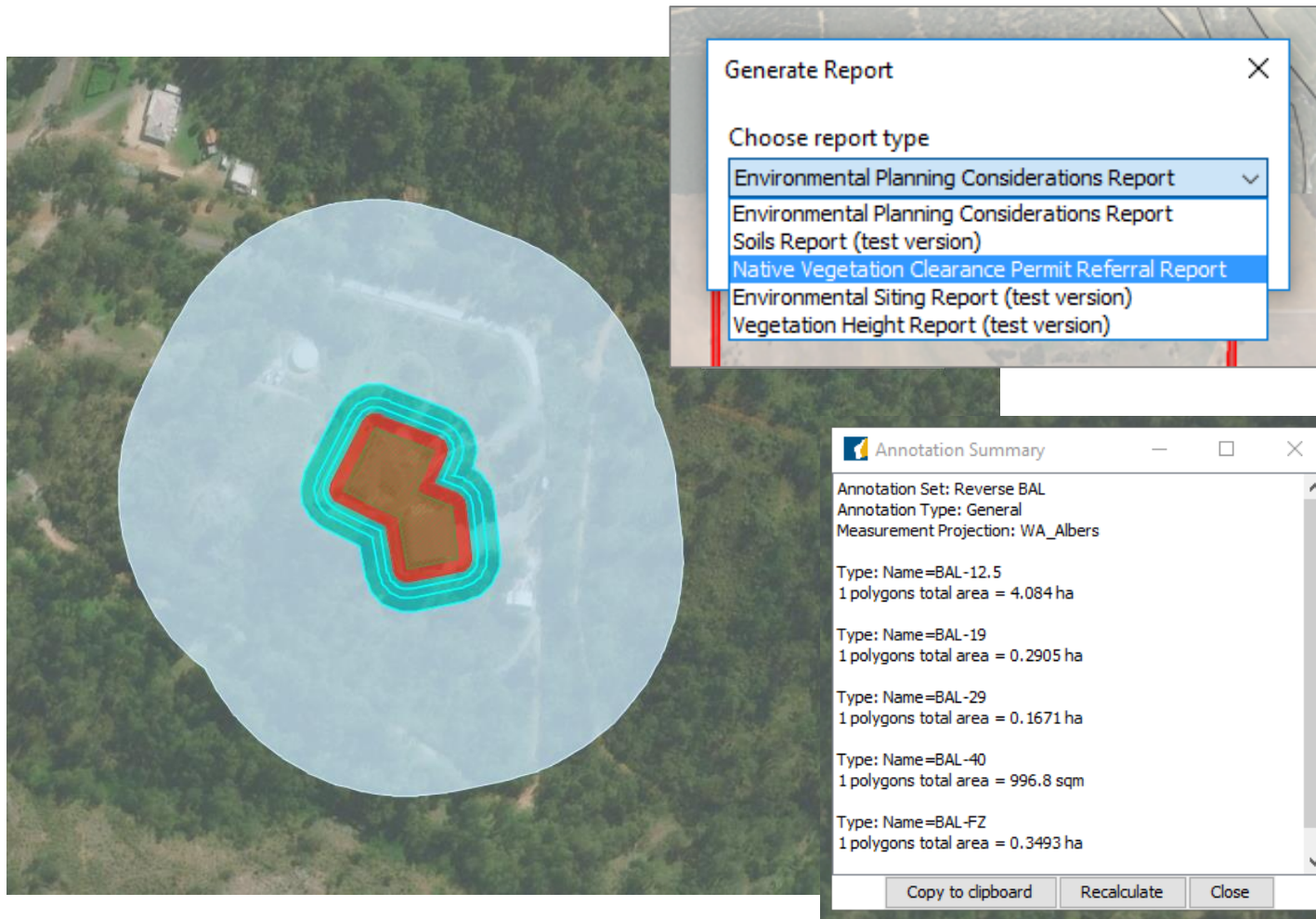
Identify potential environmental matters

Run a desktop checklist in minutes rather than spending hours/days collecting relevant up-to-date information



Environmental Matters Requiring Further Investigation	Status
Environmentally Sensitive Area *	No data
Native vegetation **	Yes
Threatened ecological communities - Commonwealth listed	Yes
Threatened ecological communities - State listed	Yes
Priority ecological communities	No data
Threatened Flora - within the selected area	No data
Threatened Flora - within the buffer of selected area	Yes
Threatened Fauna - within the selected area	No data
Threatened Fauna - within the buffer of selected area	Yes
Priority Flora or Fauna - within the selected area	No data
Priority Flora or Fauna - within the buffer of selected area	Yes
Manned as potential fauna habitat	Yes

Undertake desktop assessment for Clearing Permits where risk mitigation measures cannot be undertaken under the exemptions



2 Assessment of clearing principles

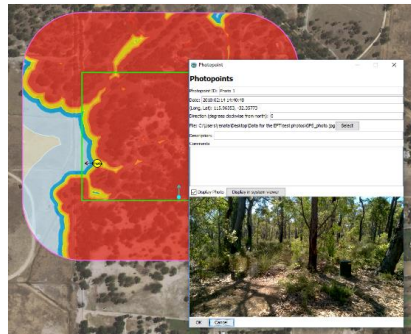
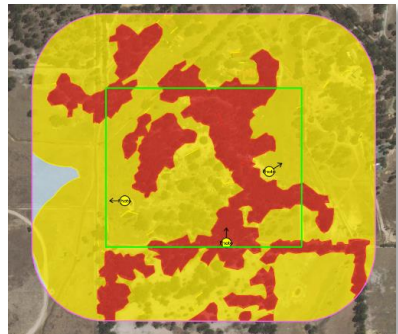
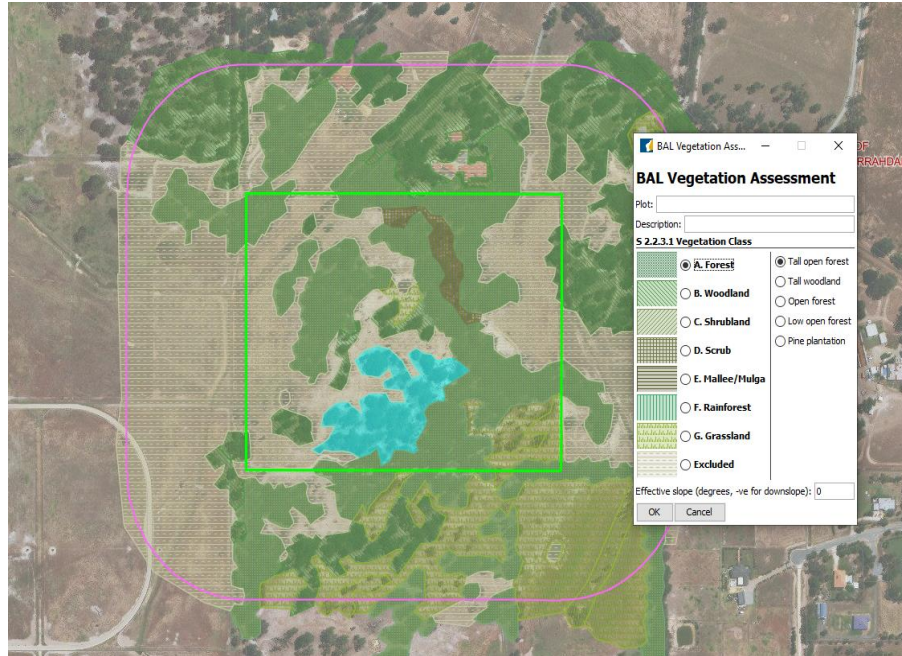
2.1 Identified Potential Impacts Summary

Desktop assessment against clearing principles:

■ Likely to be at variance ■ May be at variance ■ Not likely to be at variance

Clearing Principle	Impact	Reason	Action Required
Principle (a) - High biodiversity	■	Principle (b) red impact. Principle (e) red impact.	
Principle (b) - Significant habitat for fauna	■	Carnaby's cockatoo habitat. Specially Protected Fauna within 5km.	
Principle (c) - Habitat for rare flora	■	Declared Rare Flora within 5km.	Ground survey for vegetation condition and tree hollows in the application area may raise flag status.
Principle (d) - Habitat for TECs	■	Threatened Ecological Community (buffer) within 5km.	
Principle (e) - Significant remnant in an extensively cleared area	■	Vegetation complexes with only 1500 ha or 15% or less protected for conservation in the Jarrah Forest IBRA-region. Beard association less than 30% extent remaining within IBRA regions.	
Principle (f) - Growing in association with a watercourse or wetland	■	Application area is within 200m of a mapped natural hydrographic feature.	
Principle (g) - Likely to cause appreciable land degradation	■		
Principle (h) - Impacts to conservation area	■	Within 50m of a DBCA conservation estate. Within 50m of a EPA Redbook 1976-91 reserve.	
Principle (i) - Deterioration in the quality of surface or underground water	■	Application area: is within 200m of a mapped natural hydrographic feature.	The application area is within a RIWI, CAWSA or PDWSA area. Seek advice from the Department of Water.

Level 1 and Level 2 BAL Assessment Tools

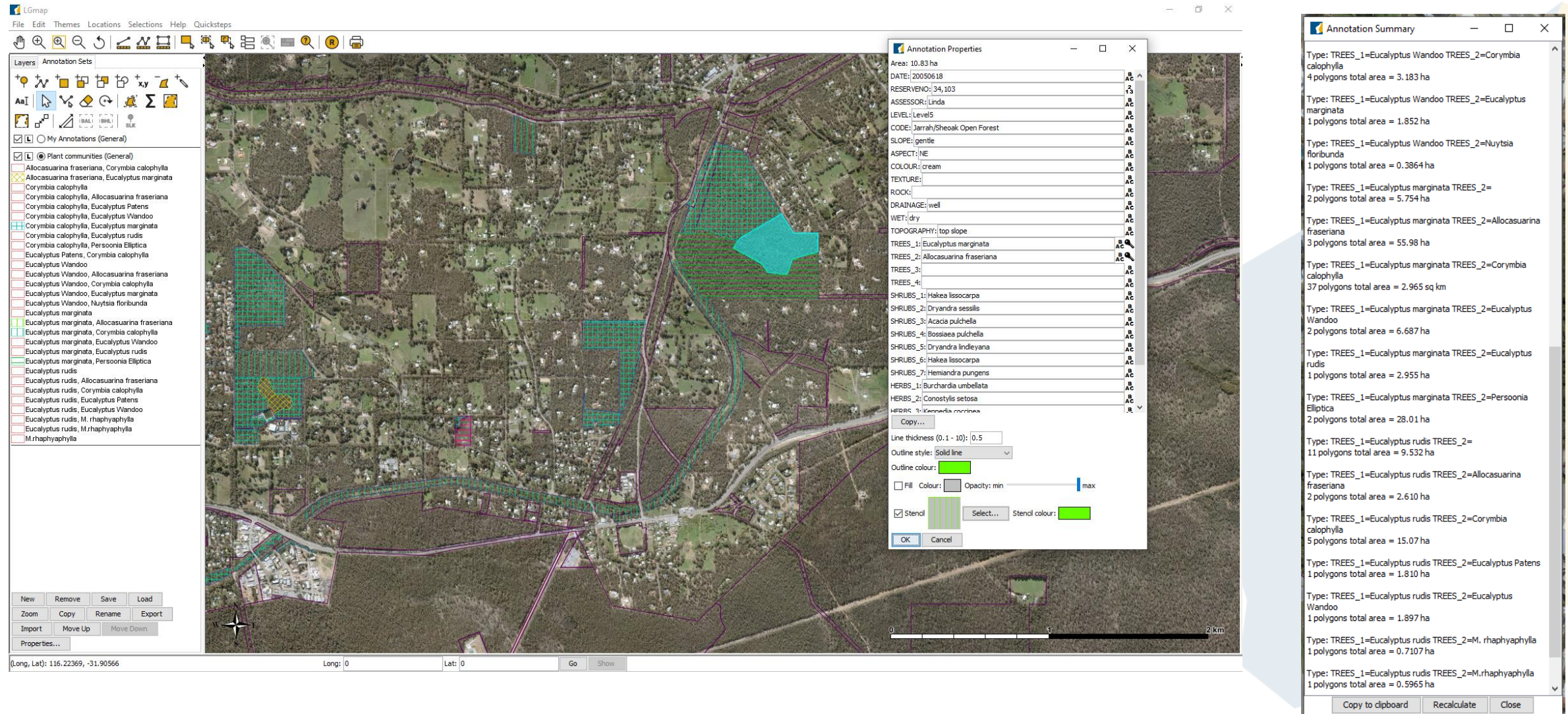


- Classify vegetation for bushfire risk assessment consistent with the AS3959
- Map the Bushfire Hazard Level categories
- Develop Bushfire Attack Level Contours
- Inform property planning



Record assets or activities

e.g. plant communities; fire history; asset conditions



Layers

- My Annotations (General)
- Plant communities (General)
 - Allocasuarina fraseriana, Corymbia calophylla
 - Allocasuarina fraseriana, Eucalyptus marginata
 - Corymbia calophylla
 - Corymbia calophylla, Allocasuarina fraseriana
 - Corymbia calophylla, Eucalyptus Patens
 - Corymbia calophylla, Eucalyptus Wandoo
 - Corymbia calophylla, Eucalyptus marginata
 - Corymbia calophylla, Eucalyptus rudis
 - Corymbia calophylla, Persoonia Elliptica
 - Eucalyptus Patens, Corymbia calophylla
 - Eucalyptus Wandoo
 - Eucalyptus Wandoo, Allocasuarina fraseriana
 - Eucalyptus Wandoo, Corymbia calophylla
 - Eucalyptus Wandoo, Eucalyptus marginata
 - Eucalyptus Wandoo, Nuytsia floribunda
 - Eucalyptus marginata
 - Eucalyptus marginata, Allocasuarina fraseriana
 - Eucalyptus marginata, Corymbia calophylla
 - Eucalyptus marginata, Eucalyptus Wandoo
 - Eucalyptus marginata, Eucalyptus rudis
 - Eucalyptus marginata, Persoonia Elliptica
 - Eucalyptus rudis
 - Eucalyptus rudis, Allocasuarina fraseriana
 - Eucalyptus rudis, Corymbia calophylla
 - Eucalyptus rudis, Eucalyptus Patens
 - Eucalyptus rudis, Eucalyptus Wandoo
 - Eucalyptus rudis, M. raphiophylla
 - Eucalyptus rudis, M. raphiophylla
 - M. raphiophylla

Annotation Properties

Area: 10.83 ha
DATE: 20050618
RESERVE: 34,103
ASSESSOR: Linda
LEVEL: Level5
CODE: Jarrah/Sheoak Open Forest
SLOPE: gentle
ASPECT: NE
COLOUR: cream
TEXTURE:
ROCK:
DRAINAGE: well
WET: dry
TOPOGRAPHY: top slope
TREES_1: Eucalyptus marginata
TREES_2: Allocasuarina fraseriana
TREES_3:
TREES_4:
SHRUBS_1: Hakea lissocarpa
SHRUBS_2: Dryandra sessilis
SHRUBS_3: Acacia pulchella
SHRUBS_4: Bossiaea pulchella
SHRUBS_5: Dryandra lindleyana
SHRUBS_6: Hakea lissocarpa
SHRUBS_7: Hemidra pungens
HERBS_1: Burchardia umbellata
HERBS_2: Conostylis setosa
HERBS_3: Kennedya morinea

Line thickness (0.1 - 10): 0.5
Outline style: Solid line
Outline colour:
☐ Fill Colour: Opacity: min max
☒ Stencil Select... Stencil colour:

Annotation Summary

Type: TREES_1=Eucalyptus Wandoo TREES_2=Corymbia calophylla
4 polygons total area = 3.183 ha

Type: TREES_1=Eucalyptus Wandoo TREES_2=Eucalyptus marginata
1 polygons total area = 1.852 ha

Type: TREES_1=Eucalyptus Wandoo TREES_2=Nuytsia floribunda
1 polygons total area = 0.3864 ha

Type: TREES_1=Eucalyptus marginata TREES_2=Eucalyptus Wandoo
2 polygons total area = 5.754 ha

Type: TREES_1=Eucalyptus marginata TREES_2=Allocasuarina fraseriana
3 polygons total area = 55.98 ha

Type: TREES_1=Eucalyptus marginata TREES_2=Corymbia calophylla
37 polygons total area = 2.965 sq km

Type: TREES_1=Eucalyptus marginata TREES_2=Eucalyptus Wandoo
2 polygons total area = 6.687 ha

Type: TREES_1=Eucalyptus marginata TREES_2=Eucalyptus rudis
1 polygons total area = 2.955 ha

Type: TREES_1=Eucalyptus marginata TREES_2=Persoonia Elliptica
2 polygons total area = 28.01 ha

Type: TREES_1=Eucalyptus rudis TREES_2=Eucalyptus Wandoo
2 polygons total area = 2.610 ha

Type: TREES_1=Eucalyptus rudis TREES_2=Corymbia calophylla
5 polygons total area = 15.07 ha

Type: TREES_1=Eucalyptus rudis TREES_2=Eucalyptus Patens
1 polygons total area = 1.810 ha

Type: TREES_1=Eucalyptus rudis TREES_2=Eucalyptus Wandoo
1 polygons total area = 1.897 ha

Type: TREES_1=Eucalyptus rudis TREES_2=M. raphiophylla
1 polygons total area = 0.7107 ha

Type: TREES_1=Eucalyptus rudis TREES_2=M. raphiophylla
1 polygons total area = 0.5965 ha

Copy to clipboard Recalculate Close

Map asset management issues and activities

LGmap - I:\Shared Draft Workspace\Environment\Environmental Planning Tool\Workshops and Training\2020\plant communities map.gpf

File Edit Themes Locations Selections Help Quicksteps



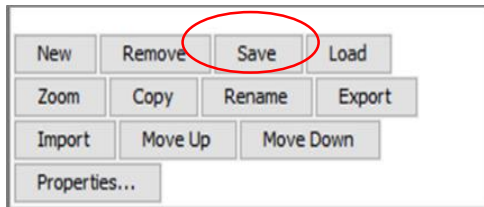
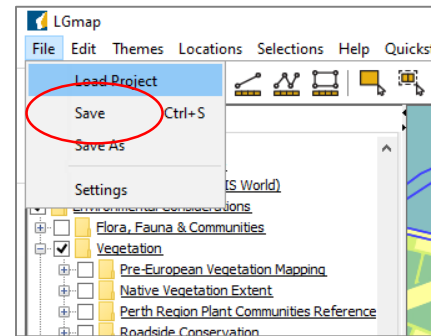
Layers Annotation Sets

- ☒ ☐ My Annotations (General)
- ☒ ☐ Infrastructure (Infrastructure)
- ☒ ☐ Exercise equipment
- ☒ ☐ Gate
- ☒ ☐ Fencing (General)
- ☒ ☐ conservation fencing
- ☒ ☐ Fire access track (General)
- ☒ ☐ access track
- ☒ ☐ walk trail
- ☒ ☐ Weed control 2019-20 (Weed Control)
- ☒ ☐ Grasses
- ☒ ☐ Fire history (General)
- ☒ ☐ 2004

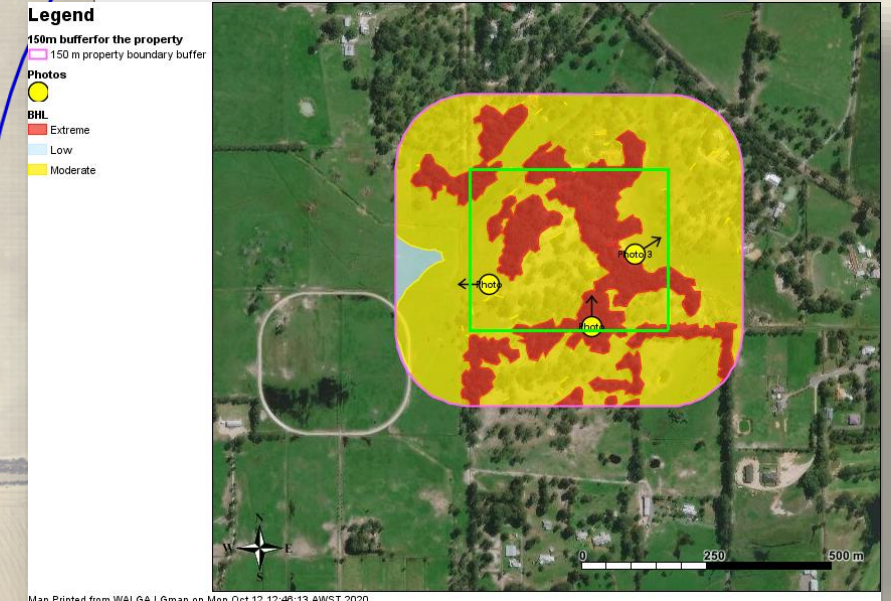
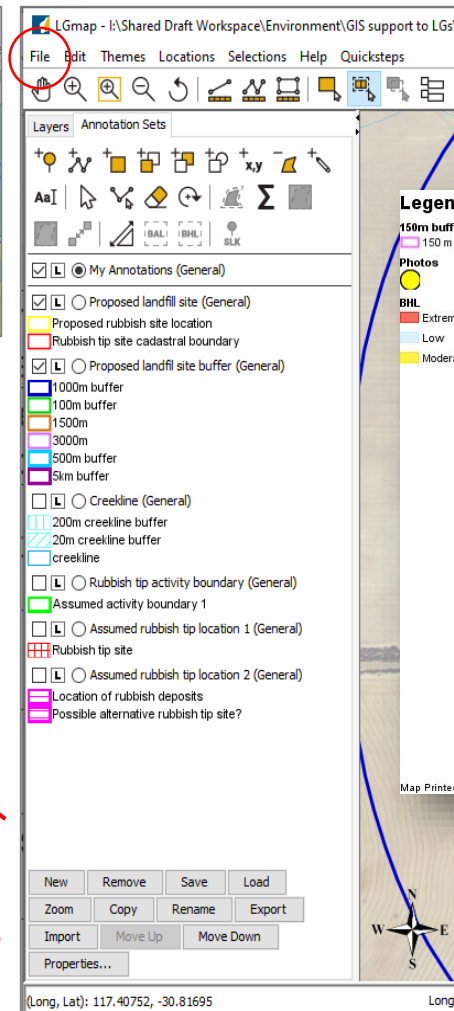
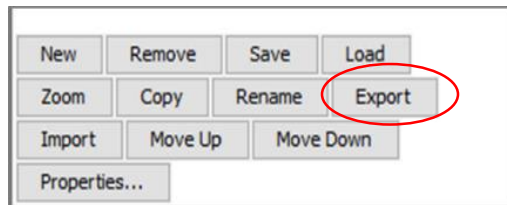


Save your records

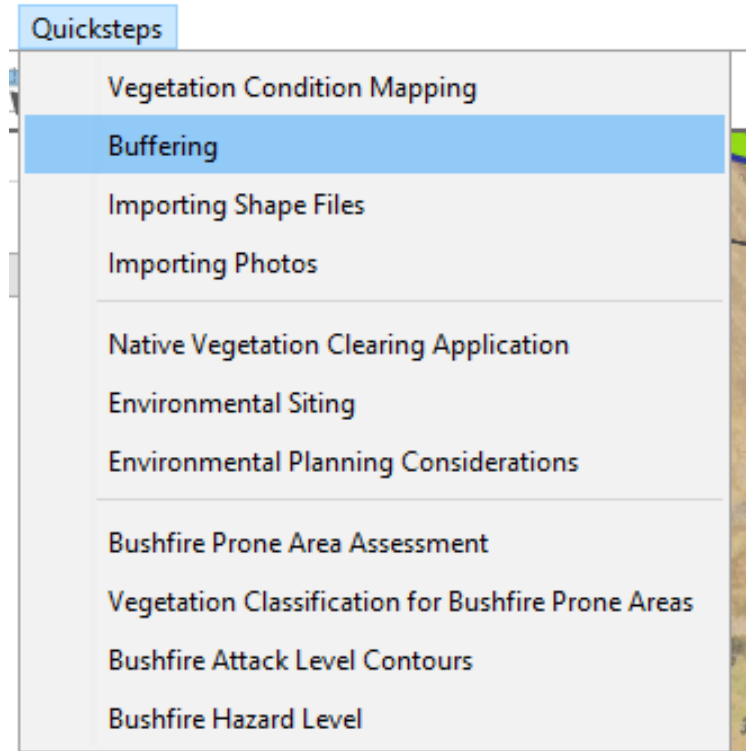
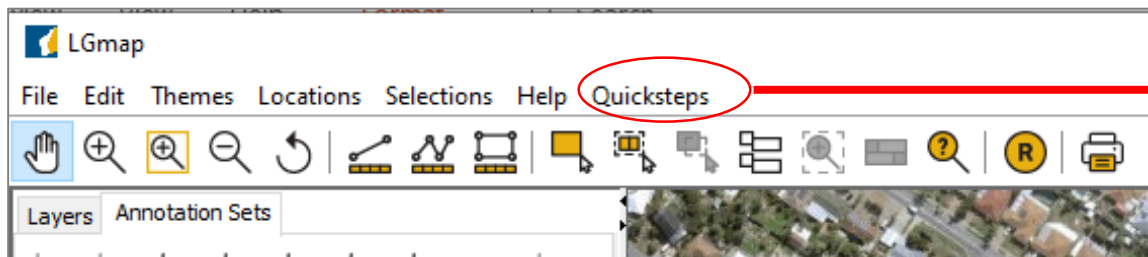
- Print a map (as picture or PDF)
- Save a project file (*.gpf)
- Save each annotation set (*.gas)



- Save each annotation set as a shape file (*.shp)



Map Printed from WALGA LGmap on Mon Oct 12 12:48:13 AWST 2020

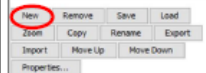

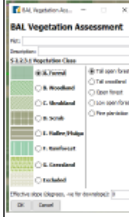






QUICK STEPS



Vegetation classification For Planning in Bushfire Prone Areas

Disclaimer: WALGA provides no warranty regarding the use of the Tools. WALGA is not responsible for any loss or damage resulting from the use of the Tools.

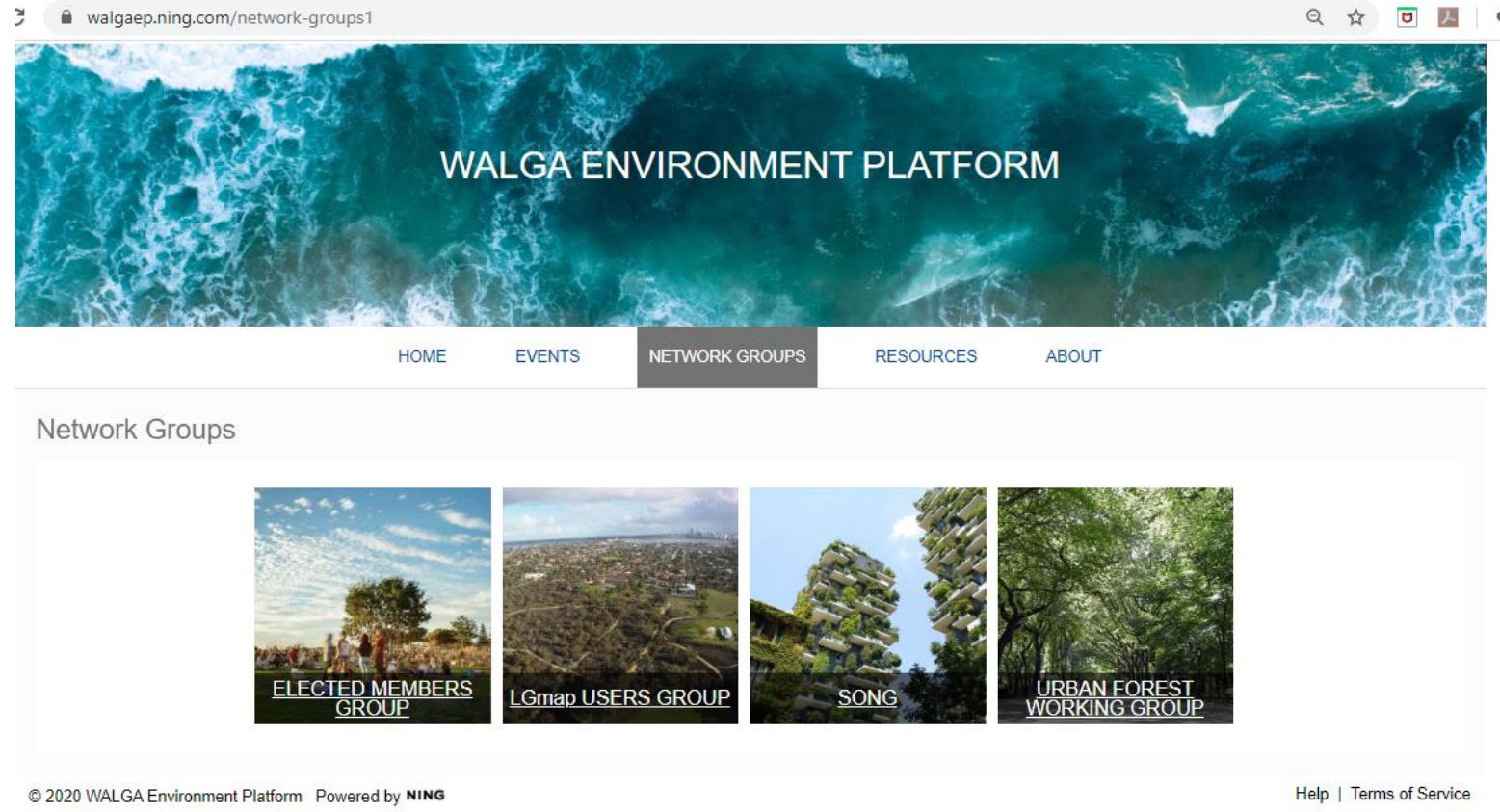
Step	How
1 Locate project area	Use the assessment area and its 150m buffer created using steps described in the Quick Steps for Buffering.
2 Set up for mapping the vegetation classes	<p>Under 'Layers' turn on Aerial photography, Property Boundaries (under Location/Topographical Features) and Contours (under Location/Topographical Features). Check what types of native vegetation are likely to occur in your project area by turning on Vegetation complexes (under Environmental Considerations/Vegetation/Native Vegetation Extent) or Beard Vegetation Associations (under Environmental Considerations/Vegetation/Native Vegetation Extent). In 'Annotation Sets' create a 'New' set, choosing 'BAL Vegetation Assessment' as the Annotation set type:</p> 
3 Trace boundaries of vegetation types considered bushfire prone	<p>Using the  Draw Area tool, trace the boundary of the first vegetation class within the project area. Use the contour mapping to identify areas of vegetation covering varied slopes. Finish by double clicking. The following annotation description window will open (see picture on the right):</p>  <p>This Vegetation Classification is consistent with the vegetation types considered bush fire prone for the purposes of the Australian Standard 3959. Refer to the Australian Standard for vegetation type descriptions.</p> <p>Where more than one vegetation type occur, each type needs to be classified separately with the worst case scenario (predominant vegetation is not necessarily the worst case scenario) applied.</p> <p>Where effective slope values are known from field assessment, enter the value into a window.</p> <p>Where slope values are unavailable, use LGmap  Slope Profiler to estimate the slope; or just leave slope value at 0 and complete once the field assessment has been completed.</p> <p>Using the  or  Draw Area tools to map all vegetation and Excluded areas within your project area and its buffer, using the description window to assign relevant vegetation classes. For each mapped area consider slope values as described above. See Figure 1 for an example of a mapped project area.</p>
4 Save/Print Project	<p>Option 1 (after every change/update): In the Menu bar, open the File option and choose Save As. This will save the annotation sets, location and all layers shown as a project file (*.gpf). This file can be viewed by other EPT users by using the Load Project function in the File option in the Menu bar. Use the  Print Map button to generate a simple map for a report and future reference.</p> <p>Option 2 (if data is to be used for future comparisons): Save the Vegetation Classification annotation set. Use the Save button in the Annotation Sets tool bar to create a *.gas file. This will save the mapped vegetation types with all the attributes as displayed in the legend on LGmap. This file can be viewed by other LGmap users by using the Load button in the Annotation sets tool bar or uploaded into other projects files.</p> <p>Option 3 (if data is to be used for future comparisons and by other GIS software): Save vegetation class mapping as a shape file by pressing the 'Export' button. Name and save the file as prompted.</p>

CONTACTS

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Service Support

- Unlimited access to LGmap by Local Government staff
- Training (at WALGA, in-house or on-line)
- 6 monthly data updates
- Upload of Local Government specific data
- Assistance with specialist analysis
- Troubleshooting and technical support
- LGmap User Group Forum and blog



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