Koala Conservation Management Plan 2018



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Introduction

The koala, *Phascolarctos cinereus*, is one of Australia's iconic marsupials. Formerly common throughout the Eucalyptus dominated forests and woodlands from north Queensland to the southeastern corner of mainland South Australia, its range has now contracted significantly due to loss of large areas of habitat (Curtis & Dennis 2012). The Gympie region has experienced a decline in koala populations (and many other native fauna species) since European settlement. However, koalas can still be found throughout various parts of the Gympie region, including Widgee, Southside, Wolvi, Goomborian and the Mary Valley.

Conservation planning for koalas and the habitat they depend upon are important considerations for improving planning and management practices to ensure long term conservation of koalas.

The Koala Conservation Management Plan (KCMP) has been developed through extensive consultation with Local Natural Resource Management (NRM) Groups including the Koala Action Group. The wider community also had the opportunity to provide input into the Management Plan during a period of open public consultation. The KCMP includes both short and long term goals aimed at reducing the wide range of threats facing koalas in the Gympie region and aims to work towards protecting and improving koala populations within the Gympie region.

The importance of koala conservation is recognised within Federal and State Government legislation and policy which acknowledges that the higher levels of government have primary responsibility for koala conservation. At local government level, Gympie Regional Council seeks to play a role in sustaining local koala populations through good regional planning and management.

The KCMP applies to the whole of the Gympie region. This region contains important habitat for koalas. Regional ecosystems covering 173,832 hectares (~44.9 per cent of the total Gympie region area) are ranked as having a high abundance of preferred koala tree species.



Refer to Figure 1 for areas of high and mediumhigh value koala habitat within the Gympie region.

It is anticipated that through the creation and implementation of this plan, other important native fauna and ecosystems will also benefit through sharing similar habitat and ecological connectivity requirements. Implementation of this Plan demonstrates Council's commitment to working with state government and the community to assist in koala conservation in our region.

Purpose

The purpose of the Koala Conservation Management Plan 2018 is to guide Council and community action to ensure the long-term sustainability of koala populations in the Gympie region.

Vision

That healthy koala habitat will be protected and improved and threats to koalas will be addressed to ensure the long-term sustainability of koala populations in the Gympie region.

KCMP outcomes

The KCMP will seek to achieve the following outcomes:

- reduce the impact of major threats to koalas across the Gympie region
- conservation and enhancement of koala habitat to improve the connectivity and quality of koala habitat
- koala conservation is incorporated into Council's operations, maintenance programs, planning scheme and development assessment processes
- koala conservation is enhanced through partnerships, community awareness and engagement
- on-going data collection, mapping and monitoring of local koala populations to assess the success of the Management Plan actions.

Koala mapping

A high resolution koala habitat mapping exercise was undertaken by consultants O2 Ecology for the Gympie region in 2015 using standardised guidelines (Policy 7 of the Koala Conservation Plan [Environmental Protection Agency 2006]) for incorporation into the planning scheme.

This mapping identified both high value koala habitat areas, and 'areas suitable for rehabilitation' (Figure 2). Koala habitat values were identified by a combination of vegetation communities preferred by koalas (pre-clear Regional Ecosystem (RE) rankings), land cover (size of patch and density) and connectivity.

Koala records were collated from various sources to help verify the model for the koala mapping project. Many records are from highly populated and highly fragmented habitats in and around remnant bushland areas and along main roads.

Records also included sick/injured and dead koalas, clusters of which may indicate areas where koalas have higher exposure to threats.

High resolution koala habitat mapping in conjunction with threat mapping is vital in making informed strategic decisions and identifying targeted strategies. A series of spatial analysis overlays using a combination of high resolution koala habitat mapping, threat mapping and land tenure produced mapping for targeted threat mitigation and priority areas for koala conservation and habitat enhancement. Application of practical mitigation measures and conservation and restoration actions to these identified priority areas ensures appropriate and efficient use of valuable funds towards conserving koalas and their habitat.

Verification of vegetation type and koala presence and ongoing maintenance of habitat mapping and koala records are necessary for informed and efficient management of koala habitat within the Gympie region.

As part of the Koala Mapping project, O2 Ecology (2016) identified some vegetation from 2014 aerial photography that has not been captured in the Queensland Government's remnant vegetation or mature regrowth mapping. This vegetation has not been field verified and is termed Unverified Vegetation. Unverified vegetation may be a plantation or weed infestation and may not be suitable koala habitat.

However, it may also be young regrowth where natural regeneration of koala habitat is already occurring and may be suitable for restoration efforts through voluntary conservation programs or agreements. It is vital to identify where core habitat exists within the Gympie region to help inform important links at a regional scale. Investigating core koala habitats where evidence of koalas are not found may indicate possible threats in the area (such as wild dogs, large wildfire etc.) and/or help us to better understand what other environmental factors determine good quality koala habitat.

Protected areas of Queensland represent those areas protected for the conservation of natural and cultural values and those areas managed for production of forest resources, including timber and quarry material. These areas are defined spatially using lot on plan parcels. These areas are captured as parcels or as a single record for each protected area." https://data.qld.gov.au/dataset/protected-areas-of-queensland-series

Protected areas of QLD do include 'plantations. Plantations however were assigned 'non-habitat' for the koala habitat mapping except where remnant vegetation exists along watercourses and there is evidence that koalas are using these corridors.

Data collection

Data collected on koalas and their habitat is used to inform mapping that can be utilised for a variety of purposes including environmental assessments, development assessment, infrastructure works (capital and maintenance) and conservation programs. In the Gympie region, koala records are collected through various means (for example koala projects, citizen science and wildlife carers).

Throughout the Gympie region various groups have their own systems to collect, record and report koala sightings. Council encourages the community and organisations to continue to collect data, as sightings data has been invaluable in the formation of this Plan. Organisations involved in data collection will continue to keep their own records and enter these into Wildnet. Council will also enter any records it receives into Wildnet.

Statutory context

Koalas are listed as vulnerable throughout Queensland at both Federal and State level. Koalas and their habitat are currently protected through a range of Federal, State and Local Government legislation and policy. This includes:

- Federal Government
 - Environment Protection and Biodiversity
 Conservation Act 1999 (EPBC Act)
 - o EPBC Act Koala Referral Guidelines
 - o EPBC Act Environment Offset Policy
- · State Government
 - Biosecurity Act 2014
 - Environmental Offsets Act 2014
 - Koala-sensitive Design Guideline: A guide to koala-sensitive design measures for planning and development activities
 - Nature Conservation Act 1992 (NC Act)
 - Nature Conservation (Koala) Conservation Plan 2017
 - Planning Act 2016
 - State Planning Policy (SPP) 2017
 - Vegetation Management Act 1999 (VM Act)
 - Wide Bay Burnett Regional Plan
- Local Government
 - Gympie Regional Council Planning Scheme 2013.

Threats to Koalas

This section identifies threats to koalas in the Gympie region. These threats have been identified as:

- habitat loss and habitat fragmentation
- disease
- vehicle strikes
- domestic dogs and feral animals
- weeds
- bushfire
- climate change.

The following provides an overview of each threat, including challenges and strategies to address each threat. Also included as part of this KCMP is an action plan which is located on pages 19-29.

Threat: Habitat loss and habitat fragmentation

Habitat loss through land clearing and the impacts of urbanisation are the greatest threats to koalas in eastern Queensland (McAlpine et al. 2012; Gordon et al. 2006; Melzer et al. 2000).

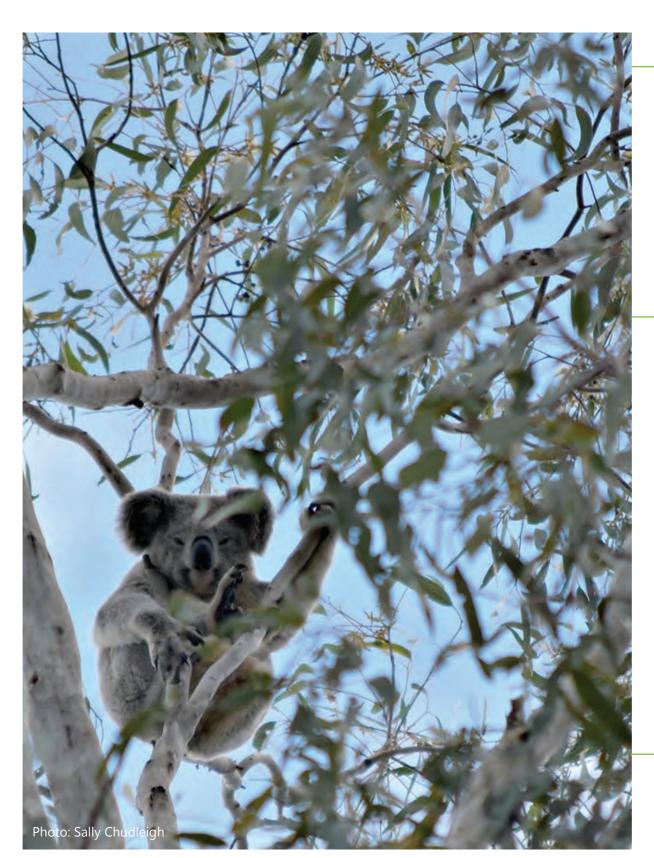
Habitat fragmentation coincides with habitat clearing and urbanisation. In addition to the impacts related to habitat loss through clearing, the expansion of infrastructure networks and urban areas in landscapes that have already undergone extensive clearing for agriculture may lead to losses of koalas due to population fragmentation (McAlpine et al. 2012) and increased exposure to other threats such as traffic and dogs (McAlpine et al. 2012; Gordon et al. 2006).

Retention, expansion and restoration of core habitat and connectivity will be important to the future of koalas within the Gympie region. Target areas for restoration efforts have been largely based on identified 'areas suitable for rehabilitation' (O2 Ecology mapping 2016).

These are areas that may be cleared or have scattered trees and have the potential to expand existing high value core habitat and assist in restoration of key corridors. The pre-clear RE and connectivity are major factors in rating 'areas suitable for rehabilitation'.

Figure 3 shows the assumed historical koala habitat (highly rated pre-clearance Regional Ecosystems) within the Gympie region based on pre-clearing regional ecosystem mapping.

Figure 4 shows current koala habitat within the Gympie region, highlighting the difference in available koala habitat between pre-clearing and current vegetation mapping.



Challenges

- Impacts from development and growth (loss, destruction and fragmentation of habitat).
- Habitat and connectivity loss in rural landscapes.
- Creating the awareness and understanding of the importance of koala corridors in rural landscapes.
- Preventing unauthorised clearing.
- State Government regulation.

How we can work together to address this threat

Strategies to reduce habitat loss and fragmentation and encourage restoration

Council programs and initiatives

- Introducing Voluntary Conservation Programs and incentives.
- Securing and protecting significant high quality koala habitat.
- Collaboration with neighbouring Councils to restore koala habitat across boundaries and collaboratively maintain corridors.
- Identifying funding opportunities for projects aimed at enhancing and creating koala habitat.

Education

Education and awareness programs targeted at landholders.

Planning and Development

- Implementation of development provisions or koala conservation criteria in the Planning Scheme to minimise the impacts of new development on koalas and
- Incorporation of koala habitat protection into the planning scheme.

- Gympie Regional Council
 - Planning and Development
 - Infrastructure Services
 - Corporate and Community Services
- · Koala Action Group
- Local NRM Groups
- Landholders

Threat: Disease

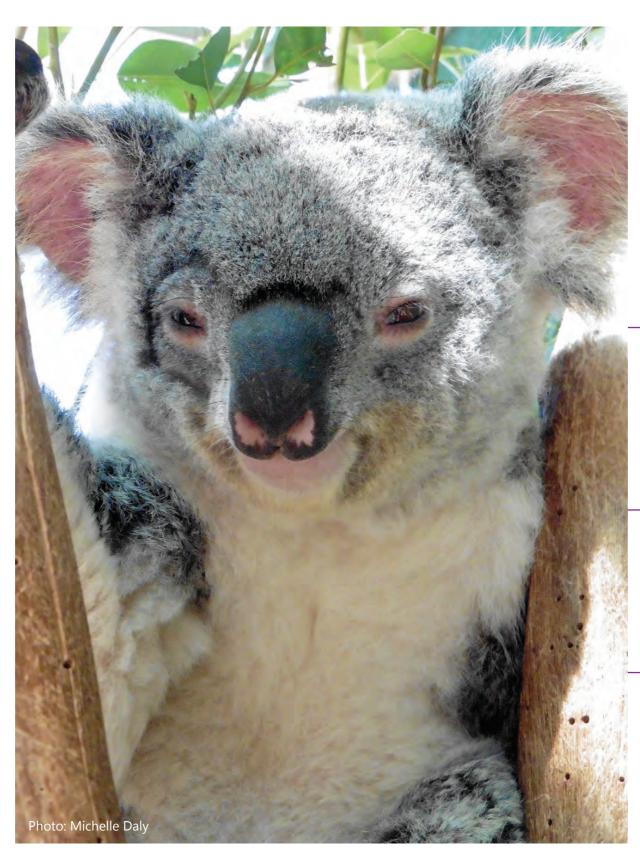
Infectious disease in koalas is one of the critical threatening processes contributing to their dramatic population declines in Queensland and New South Wales (Jon Hanger & Loader 2009).

Two of the most important infections are koala retrovirus (KoRV) and Chlamydia. Retroviruses are known to induce tumors and/or immunodeficiency (Rosenberg & Jolicoeur 1997) and induced immunodeficiency often results in the onset of disease associated with opportunistic infections (Denner & Young 2013). One hundred per cent of koalas sampled in Queensland and New South Wales by Simmons *et al.* (2012) were carrying the KoRV-A virus.

Many koalas carry Chlamydia but do not always show clinical symptoms (chlamydiosis). Chlamydiosis is a major disease of koalas in the wild and in captivity (Brown *et al.* 1987). Chlamydial infection in koalas is common, affecting most mainland and many island koala populations, and is commonly associated with eye infections, urinary tract infection and reproductive tract disease with infertility a common sequel to reproductive tract infection (J. Hanger & Loader 2009). Severe disease is more common in Queensland and New South Wales koalas than those in southern Australia (Timms 2000).

Research projects are currently underway to identify if there are links between koala health and genetic variability. Reduced genetic diversity associated with poor connectivity and isolated core habitats may be compounding the risk of disease.

The clearing of primary habitat forcing koalas to inhabit secondary habitats (with fewer primary koala feed trees and diminished nutrition) may also be compounding the risk of disease (Dudaniec *et al* 2013).



Understanding the health, needs and movements of resident koala populations through collaboration with researchers, local vets and Wildlife Carers is important for informing appropriate koala management programs such as:

- release of rescued koalas
- targeted koala health programs
- · establishment of safe corridors.

There is currently limited information in relation to disease mapping. Current research projects are underway to identify links between koala health, genetic diversity and koala habitat. Results from these projects can be incorporated into koala habitat mapping and assist in making informed decisions on many programs.

Challenges

- Funding
- Habitat fragmentation data
- Lack of understanding

- Habitat clearing
- Lack of information and

How we can work together to address this threat

Strategies to increase our awareness and knowledge about diseases include:

- Promoting and supporting scientific research focused on koalas and their habitat within the Gympie region.
- · Providing support to local Wildlife Carers.

- Gympie Regional Council
 - Planning and Development
 - Infrastructure Services
- Universities and Research Institutes
- Koala Action Group
- · Wildlife Carers

Threat: Vehicle strike

The threat of vehicle strikes increases as land adjacent to koala habitat is developed and occupied by humans. The threat is concentrated in urban and periurban areas but also exists in rural areas (Crowther *et al.* 2010).

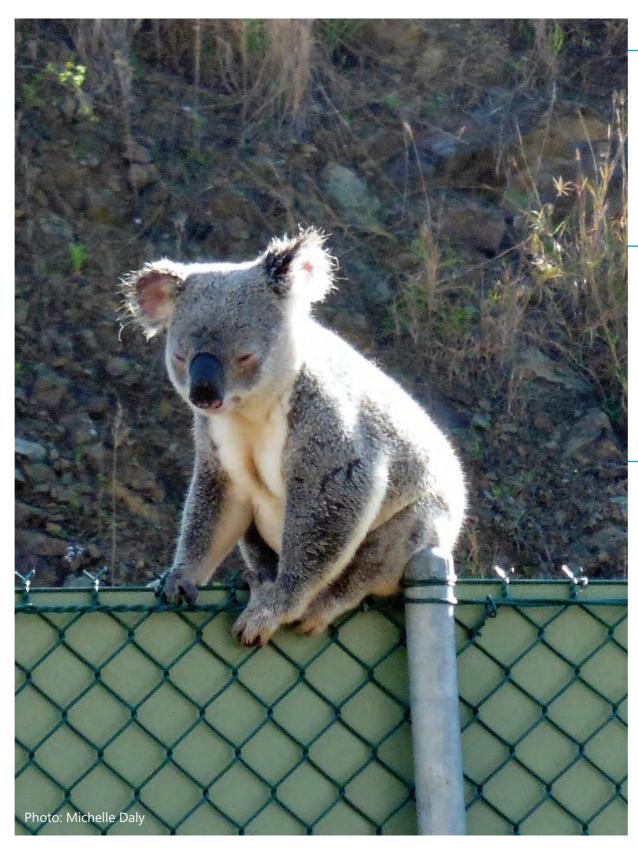
Studies in south eastern Queensland have shown that approximately five per cent of the annual mortality rate in the Koala Coast region can be attributed to vehicle strike (Dique *et al.* 2004).

Many koalas being hit by cars is often correlated to roads with high traffic volumes, high speed limits, and/or poor roadside visibility in high koala habitat areas and corridors (McApline *et al.* 2006).

Mitigation measures used to reduce the effects of roads and road mortality on wildlife populations fall into two broad categories (Glista *et al.* 2009):

- modification of animal behaviour address vulnerability to road-kill and barrier effects
- modification of motorist behaviour address vulnerability to road-kill.

Not all koala sightings and vehicle strikes are recorded; hence it is also important to identify known koala corridors that cross major roads. Figure 5 prioritises State Government, proposed State Government and sealed roads by density of koala sightings near roads, recorded koala strikes and potential movement corridors across roads. Roads where koalas have been recorded by koala hospitals are also highlighted.



Challenges

- · Animal behaviour.
- Human/motorist behaviour.
- · Sign installation and lack of information to determine their effectiveness.
- Accurate databases of koala strikes.

How we can work together to address this threat

Strategies to mitigate vehicle strikes include:

Council programs and initiatives

- Collaboration with relevant State Government Departments regarding identified State roads for mitigation measures and funding opportunities
- Koala movement infrastructure considered in designs for new and upgraded roads and high priority locations.

- · State Government
- Gympie Regional Council
 - Planning and Development
- Infrastructure Services
- Koala Action Group
- Local NRM Groups

Threat: Domestic dogs and feral animals

The threat of domestic dog attacks increases as land adjacent to koala habitat is developed and occupied by humans. The threat is concentrated in urban and periurban areas but also exists in rural areas (Crowther *et al.* 2010).

Koalas are at particular risk in fragmented areas where domestic dogs are not secured properly in dog yards and are able to roam at night and early morning. The risk to koalas is increased as this is when koalas are on the move and/or in breeding season and have few surrounding trees to escape to (Environmental Protection Agency 2006).

Wild dogs, foxes and cats are also a known concern in the Gympie region, posing a threat to koalas and other native wildlife. They are widespread throughout the Gympie region and koalas are particularly at risk in highly fragmented landscapes.



Challenges

- · Irresponsible dog ownership.
- · Feral animal control.
- Habitat fragmentation and loss.

How we can work together to address this threat

Strategies to mitigate the threat of domestic dogs and feral animals include:

Council programs and initiatives

- Prompt response to reports of stray dogs.
- Ensuring efficient response to reported dog attacks on koalas and stray dogs in koala habitat areas.
- Collaboration with State Government regarding funding opportunities particularly in identified restricted bait zone areas containing high koala habitat.
- Increased monitoring and feral animal control within identified high priority areas particularly high priority Council properties.
- · Continuation of the feral animal baiting program.

Education

- Installing koala awareness and responsible dog ownership signs in identified Council properties.
- Employing education and awareness strategies to encourage responsible dog ownership.

- State Government
- Gympie Regional Council
 - Planning and Development
 - Infrastructure Services
- RSPCA
- Koala Action Group
- Local NRM Groups
- Wildlife Carers
- Landholders

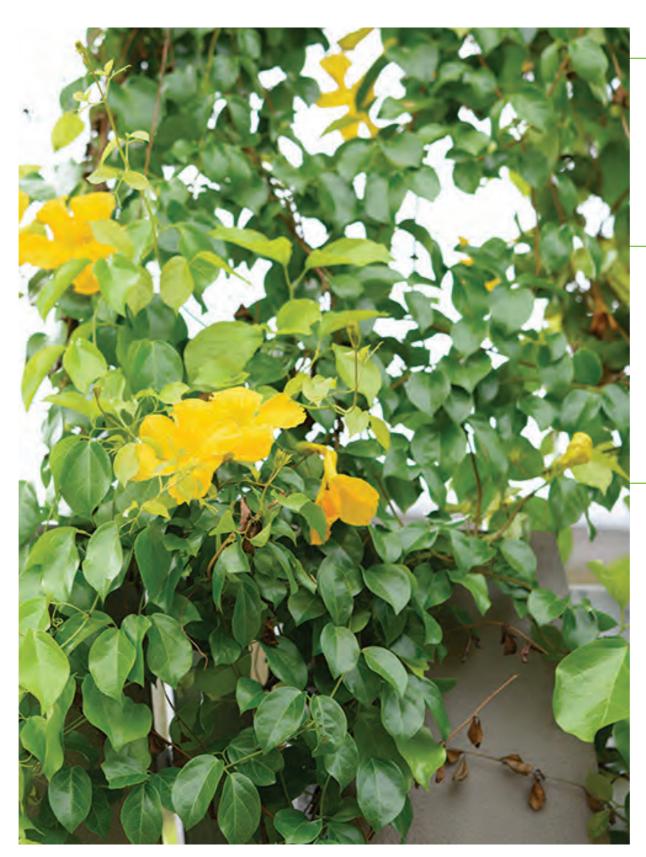
Threat: Weeds

Weeds can alter ecosystem function and fire properties, reduce agricultural productivity and profitability and can have serious environmental, economic and social impacts.

Weed management is important in protecting remnant vegetation and promoting natural regeneration of koala habitat. Weeds can affect koalas by altering the ecosystems in which they live and inhibiting their movement or access to food or shelter trees.

Weedy Sporobolus Grasses, Groundsel, Cats Claw Creeper, Madeira Vine, Lantana, Chinese Celtis, Annual Ragweed and Parthenium are currently posing the biggest threats around the Gympie region (Gympie and District Landcare 2016).

Gympie Regional Council has various pest management programs covering both declared weeds and non-declared weeds. This includes weeds such as Cats Claw and Madeira Vine that have, or could have, an adverse economic, environmental or social impact.



Challenges

- Lack of education and awareness
- Lack of resources
- Funding
- Mapping

How we can work together to address this threat

Strategies to mitigate the threat of weeds include:

Council programs and initiatives

- Conservation programs to encourage weed control on private property.
- Carrying out field surveys for weeds known to impact on koala habitat or movement.
- Education and awareness programs targeted at landholders in the identification of weed species and control methods.

- State Government
- · Gympie Regional Council
 - Planning and Development
- · Burnett Mary Regional Group
- Koala Action Group
- Local NRM Groups
- Landholders

Threat: Bushfire

In the immediate and short-term, fire can cause koala mortality, loss of shelter, loss of habitat and increased predation.

Both wildfires and hazard reduction burns have been known to cause koala mortalities in the Gympie region (pers comment. Gympie Rural Fire Brigade 2016).

The Disaster Management Branch is currently producing a Five Year Bushfire Management Plan and it is recommended that effective fire management strategies that are 'tenure blind' (all properties regardless of tenure) are implemented in high value koala habitat. Particular care and design of hazard reduction burns should be given to areas where high value koala habitat is located in 'very high' or 'high' bushfire prone areas (identified by QFES and CSIRO) to ensure minimal impact to koalas.



Challenges

- Lack of education and awareness.
- · Lack of resources.
- Koalas and their habitat being considered in burn plans.
- · Uncontrolled burns/unplanned burns/wildfires.

How we can work together to address this threat

Strategies to increase our knowledge and to encourage consideration of koalas include:

Council programs and initiatives

- Collaboration with State Government departments regarding bushfire management strategies (including koala rescue) and training programs
- Incorporation of koalas into strategic bushfire management plans and hazard reduction burns.

- Gympie Regional Council
 - Planning and Development
 - Infrastructure Services
- Rural Fire Brigade
- · Koala Action Group
- Wildlife Carers

Threat: Climate change

Climate change is expected to lead to increased frequency of high temperatures, changes to rainfall, increasing frequency and intensity of droughts, and increased fire risk over much of the Koala's range (National Resource Management Ministerial Council (Australia) 2010).

Impacts to koalas could potentially include:

- Range contraction eastwards as temperatures increase inland and fodder leaf moisture decreases (Adams-Hosking *et al.* 2011).
- Increased stress from droughts and reduced capacity of a population to recover as the length of droughts increases (Department of the Environment 2015).
- Changes in leaf chemistry induced by elevated CO2 in the atmosphere (DeGabriel et al. 2009).



Challenges

- Lack of knowledge and understanding.
- Understanding the impacts on koalas.
- Funding.
- · Limited resources.

How we can work together to address this threat

Strategies to increase our knowledge, awareness and mitigate threats include:

• Incorporating measures to facilitate resilience in the region's biodiversity into land use planning outcomes.

- State Government
- Gympie Regional Council
- Planning and Development
- Universities and Research Institutes
- Koala Action Group
- Local NRM Groups

Action Plan

Action	Performance indicator	Responsibility	Timeframe	Target area map	Funding source
Threat: Habitat loss and fragmentation					
Investigate opportunities for investment in significant koala habitat including land acquisition environmental offset investments and voluntary conservation agreements.	At least 50 ha of high value koala habitat are added to the conservation network per annum.	Planning and Development	On-going	Figure 6 and Figure 7	Environment Levy, State and Federal Government programs and offset funds contributed by developers
Incorporate koala habitat protection into Planning Scheme.	Development outcomes incorporate sound koala conservation measures.	Planning and Development	High priority (1-3 years)	N/A	Rates revenue and Environment Levy
Implementation of development provisions or koala conservation criteria in the Gympie Planning Scheme to minimise the impacts of new development on koalas.	Provisions added and may include koala friendly estates, fencing standards, traffic management, existing corridors are retained and maintained, planting of native vegetation to provide corridors, habitat and feed, promote natural regeneration of koala habitat and spotter catcher requirements during vegetation removal.	Planning and Development	High priority (1-3 years)	N/A	Staff resources
Actively investigate unauthorised or illegal clearing activities within development trigger areas. Apply penalties as appropriate.	Unauthorised or illegal clearing activities within development trigger areas are actively investigated. Penalties applied as appropriate.	Planning and Development	High priority (1-3 years)	N/A	Staff resources
Advocate to the State Government to allow Gympie Regional Council to regulate koala habitat in the Planning Scheme and reflect koala conservation as a priority in the Wide Bay Burnett Regional Plan and State Planning Policy outside South-east Queensland.	Discussion held with the State Government.	Planning and Development	High priority (1-3 years)	N/A	Staff resources
Develop guidelines for habitat restoration using preferred koala tree species.	Guidelines developed and distributed. Guidelines incorporated into Planning Scheme Policy.	Planning and Development working with Koala Action Group, Local NRM Groups	High priority (1-3 years)	N/A	Environment Levy
Identify grant opportunities and apply for relevant grant applications for restoration projects on Council properties.	Attract Federal and State co-investment in koala habitat restoration.	Planning and Development working with Infrastructure Services, Corporate and Community Services, State Government, Koala Action Group and Local NRM Groups	On-going	N/A	Staff resources, external grants
Restore koala habitat on appropriate Council properties.	Investigations undertaken and restoration commenced on Council property where feasible.	Planning and Development working with Infrastructure Services and Corporate and Community Services	Medium priority (3-5 years)	Figure 8	Environment Levy, external grants
Establish and maintain a database of restoration projects.	Database and mapping created and updated quarterly.	Planning and Development working with Infrastructure Services	On-going	N/A	Staff resources
Incorporate new koala records and results from research projects in the area into Council mapping.	Current and accurate koala records and mapping.	Planning and Development working with Infrastructure Services	On-going	N/A	Staff resources
Monitor vegetative cover over the Gympie region using available aerial photography and vegetation mapping.	Investigate unauthorised activities.	Planning and Development working with Infrastructure Services	On-going	N/A	Staff resources
Promote opportunities for investment in koala habitat with Federal and State Government Departments.	Meetings held with relevant Federal and State Government Departments and third party environmental offset investment attracted where possible.	Planning and Development working with Corporate and Community Services	High priority (1-3 years) (Particularly DTMR stage D)	Figure 6 (including identified significant State land)	External programs

Action	Performance indicator	Responsibility	Timeframe	Target area map	Funding source
Threat: Habitat loss and fragmentation					
Collaborate with neighbouring Councils on management strategies and projects related to protecting/improving koala habitat on adjoining boundaries and maintaining movement corridors.	Seamless koala habitat management and planning.	Planning and Development working with Infrastructure Services	On-going	N/A	Staff resources
Incorporate koala and koala habitat considerations into Property Management Plans prepared for Council properties, including but not limited to habitat condition assessment, weed management, use of appropriate fencing, community awareness signage (e.g. koalas, habitat, and responsible dog ownership) and feral animal control.	Property Management Plans prepared for Council properties. Koala habitat is maintained and enhanced.	Planning and Development working with Infrastructure Services and Corporate and Community Services	High priority (1-3 years)	Figure 9	Environment Levy
Ensure Council land containing significant koala habitat is highlighted and appropriate management is incorporated into leasing and other contracts.	Koala habitat is maintained and enhanced on Council land.	Corporate and Community Services working with Planning and Development	High priority (1-3 years)	Figure 9	Staff resources
Investigate knowledge gap areas including identified patches of unverified vegetation in high value koala habitat to provide accurate mapping for informed decision making.	Verify vegetation in priority areas. Update koala habitat mapping with the results.	Planning and Development	Very high priority within 12 months	Figure 10	Environment Levy
Incorporate consideration of koalas into roadside management and planned Council works (e.g. spotter catchers, roadside verge maintenance, informed strategic decisions).	Koalas considered in roadside vegetation management works.	Planning and Development working with Infrastructure Services	On-going	Figure 11	Staff resources
Promote and support scientific research focused on koalas and their habitat within the Gympie region.	Support on-going research into koalas and their habitat.	Planning and Development	On-going	N/A	Environment Levy
Investigate initiatives to encourage protection of high value koala habitat on private property.	Analysis of feasibility of contemporary models for market based incentives.	Planning and Development	High priority (1-3 years)	Figure 12	Staff resources
Raise awareness about the impact of clearing on koalas and appropriate vegetation management practices under the <i>Vegetation Management Act 1999</i> .	Increased community awareness of koala conservation.	Planning and Development working with the State Government, Koala Action Group and Local NRM Groups	Medium Priority (3-5 years)	N/A	Environment Levy
Implement public education and awareness campaigns about conserving existing koala habitat on private property.	Increased community awareness of koala conservation.	Planning and Development working with Koala Action Group and Local NRM Groups	High priority (1-3 years)	N/A	Environment Levy
Encourage landholders to protect and enhance koala habitat and koala corridors.	Increased community awareness of koala conservation.	Environmental Planning working with local NRM groups	High priority (1-3 years)	Figure 7	Environment Levy and external funding grants
Promote use of provenance stock for koala feed trees by local nurseries.	Nurseries encouraged to propagate stock from locally harvested seed from trees known to have been used by koalas.	Planning and Development working with Local NRM Groups	On-going	N/A	Environment Levy
Promote accurate labelling of seedlings with collection site and species.	Nurseries encouraged to propagate stock from locally harvested seed from trees known to have been used by koalas.	Planning and Development working with Local NRM Groups	On-going	N/A	Environment Levy
Provide permits for seed collection on Council land. Notify nurseries of seed collection potential during unavoidable vegetation clearing by Council.	Nurseries encouraged to propagate stock from locally harvested seed from trees known to have been used by koalas.	Planning and Development working with Local NRM Groups	On-going	N/A	Environment Levy
Create and maintain a database of koala records.	Data is entered quarterly on Wildnet.	Planning and Development	On-going	N/A	Staff resources

Action	Performance indicator	Responsibility	Timeframe	Target area map	Funding source
Threat: Habitat loss and fragmentation					
Koala habitat mapping to be maintained.	Koala mapping updated in five years.	Planning and Development working with Infrastructure Services	Medium priority (3-5 years)	N/A	Environment Levy
Encourage the community to report koala sightings.	Sightings database updated. Sightings entered into Wildnet.	Planning and Development	On-going	N/A	Staff resources
Investigate the creation of a koala information page on the environment page of Councils internet.	Koala information page created on Council's website.	Planning and Development	High priority (1-3 years)	N/A	Staff resources

Action	Performance indicator	Responsibility	Timeframe	Target area map	Funding source
Threat: Disease					
Provide support to local Wildlife Carers.	Support provided.	Planning and Development working with Wildlife Carers	On-going	N/A	Staff resources, Environment Levy
Incorporate results from the current University of Sunshine Coast genetic analysis research project into current koala mapping.	Findings of current research project incorporated into koala habitat mapping. The University encouraged to share their findings with the community.	Planning and Development working with Infrastructure Services, Universities and Research Institutes	Medium priority (3-5 years)	N/A	Staff resources
Actively promote the information and reporting phone number for wildlife rescue and sightings.	Implement new and improved ways of communicating this message.	Planning and Development working with Koala Action Group and Local NRM Groups	On-going	N/A	Staff resources

Action	Performance indicator	Responsibility	Timeframe	Target area map	Funding source
Threat: Vehicle strikes					
Initiate discussions or liaise with the State Government regarding possible mitigation measures along identified priority State controlled roads.	Discussions held with DTMR regarding identified high priority State controlled roads.	Planning and Development working with Infrastructure Services, State Government, Koala Action Group and Local NRM Groups	High Priority (1-3 years)	Figure 5	Staff resources
Incorporate koala movement infrastructure into designs for new and upgraded roads.	Safe koala movement is facilitated.	Planning and Development working with Infrastructure Services	On-going	Figure 5	Staff resources, Rates revenue
Investigate and (where feasible) implement affordable koala road safety measures at high priority locations.	Safe koala movement is improved.	Infrastructure Services working with Planning and Development	On-going	Figure 5	Rates revenue, Environment Levy
Investigate studies into the effectiveness of koala and wildlife signage.	Contact made with other local governments who have undertaken this research. Findings shared.	Planning and Development	High Priority (1-3 years)	N/A	Staff resources
Actively promote the information and reporting line for wildlife rescue and sightings.	Implement new and improved ways of communicating this message.	Planning and Development working with Koala Action Group and Local NRM Groups	On-going	N/A	Staff resources
Maintain accurate databases on koala strikes.	Database created to inform mapping.	Planning and Development working with Koala Action Group and Local NRM Groups	On-going	N/A	Staff resources

Action	Performance indicator	Responsibility	Timeframe	Target area map	Funding source	
Threat: Domestic dogs and feral animals						
Promptly respond to reports of stray dogs in accordance with available resources.	Reports including results of investigations recorded in Council's Customer Management System.	Planning and Development	On-going	N/A	Staff resources	
Council parks and properties in koala habitat areas are effectively signed posted to raise awareness of domestic dog attacks on koalas and expectations of dog owners within parks.	Signs installed at high priority Council parks and properties.	Infrastructure Services working with Planning and Development	High Priority (1-3 years)	Figure 13	Staff resources, Rates revenue	
Develop educational material to raise awareness of domestic dogs and koalas that promotes responsible dog ownership.	Dissemination of material at strategic events.	Planning and Development	High Priority (1-3 years)	N/A	Staff resources, Environment Levy	
Encourage landholders to carry out wild dog and feral animal control on their properties.	Implement new and improved ways of communicating this message. Maintain records about participating properties and baiting areas.	Planning and Development working with Landholders	On ground actions are ongoing	N/A	Staff resources	
Collaboration with relevant stakeholders regarding wild dog and feral animal control measures in restricted baiting zones.	Liaise with relevant stakeholders to identify methods and assistance with wild dog and feral animal management in restricted baiting zones.	Planning and Development	On-going	N/A	Staff resources	
Investigate potential co-investment for wild dog and feral animal control measures in high value koala habitat.	Identify and apply for funding opportunities for assistance with wild dog and feral animal management programs.	Planning and Development	High Priority (1-3 years)	N/A	Staff resources	
Increased wild dog and feral animal monitoring (for example using cameras) and management in high priority koala habitat on Council properties.	Implement wild dog and feral animal monitoring and control in high priority Council properties.	Planning and Development	High Priority (1-3 years)	Figure 14	Staff resources, Rates revenue	
Collaboration and coordination with State Government, land managers and rural land owners.	Coordinated and effective predator control.	Planning and Development working with State Government and Landholders	On-going	N/A	Staff resources	
Raise awareness about the threat of wild dogs and feral animals to koalas and the control programs available.	Implement new and improved ways of communicating this message. For example on-hold background phone message, brochures, website, social media.	Planning and Development	On-going	N/A	Staff resources, Rates revenue	

Action	Performance indicator	Responsibility	Timeframe	Target area map	Funding source
Threat: Weeds					
Incorporate weed control into conservation programs to protect and improve the condition of existing high value koala habitat.	Conservation programs implemented that encourage weed control by property owners and community groups.	Planning and Development working with Koala Action Group, Local NRM Groups and Landholders	High Priority (1-3 years)	N/A	Staff resources, Environment Levy
Identify funding opportunities for weed control in high value koala habitat.	Identify and apply for funding opportunities for weed control programs.	Planning and Development	Medium priority (3-5 years)	N/A	Staff resources
Field surveys for Cat's Claw and Madeira Vine which have impact on koala habitat and movement.	Targeted field surveys undertaken for Cat's Claw Creeper and Madeira Vine on: • priority Council properties, road and water reserves containing high value koala habitat.	Planning and Development	High Priority (1-3 years)	Figure 15	Staff resources, Rates revenue
	all properties (regardless of tenure) within or adjacent to high value koala habitat.				

Action	Performance indicator	Responsibility	Timeframe	Target area map	Funding source
Threat: Weeds					
Implement a control and management program for identified weed infestations in high value koala habitat.	 Implement a control and management program for identified weed infestations on: priority Council properties, road and water reserves containing high value koala habitat all properties (regardless of tenure) within or adjacent to high value koala habitat. 	Planning and Development working with State Government, BMRG and Local NRM Groups	High Priority (1-3 years - on- ground works)	Identified through field survey results	Staff resources, Rates revenue
Highlight the impact of weeds on high value koala habitat and movement koalas in current education and awareness programs.	Information added to current education and awareness programs.	Planning and Development working with Koala Action Group and Local NRM Groups	On-going	N/A	Staff resources

Action	Performance indicator	Responsibility	Timeframe	Target area map	Funding source		
Threat: Bushfire	Threat: Bushfire						
Ensure koalas and koala habitat is considered in the preparation of a Five Year Bushfire Plan, Strategic Bushfire Management Plans and Hazard Reduction Activities.	Liaise with Queensland Fire and Emergency Services to identify existing guidelines, standard training packages and discuss incorporation of koala considerations into operational plans. Active involvement with Operation Cool Burn fire management group; assist with disseminating koala	Infrastructure Services working with Planning and Development	High Priority (1-3 years)	Figure 16	Staff resources		
Ensure rural fire brigades have contact numbers for koala rescue teams.	habitat mapping information during bi-annual meetings. Liaise with Queensland Fire and Emergency Services to identify existing guidelines, standard training packages and discuss incorporation of koala considerations into operational plans.	Infrastructure Services working with Planning and Development	High Priority (1-3 years)	N/A	Staff resources		
	Active involvement with Operation Cool Burn fire management group; assist with disseminating koala habitat mapping information during bi-annual meetings.						
Train representative rural fire brigade members in identifying if koalas are present during pre-burn inspections, koala rescue techniques and/or scanning the area post burns for injured wildlife.	Liaise with Queensland Fire and Emergency Services to identify existing guidelines, standard training packages and discuss incorporation of koala considerations into operational plans. Active involvement with Operation Cool Burn fire	Infrastructure Services working with Rural Fire Brigade, Koala Action Group and Wildlife Carers	High Priority (1-3 years)	N/A	Rates revenue		
	management group; assist with disseminating koala habitat mapping information during bi-annual meetings.						
Ensure koala related materials (such as mapping) are easily accessible to all relevant stakeholders including rural fire brigades:	Material provided.	Infrastructure Services working with Planning and Development, Rural Fire Brigade and Wildlife Carers	On-going	Figure 16	Staff resources		
 high and medium value koala habitat in 'very high' or 'high' bushfire prone areas - allows planning for controlled burns that are in the vicinity of koala habitat 							
guidelines and training packagesprofessional koala rescue and wildlife carer contact details.							

Action	Performance indicator	Responsibility	Timeframe	Target area map	Funding source
Threat: Climate change					
Identify, protect and conserve habitat connectivity along climate, geographical, altitudinal and biological gradients building natural opportunities for refuge.	Properties identified and measures investigated to protect and conserve these areas identified as refuge.	Planning and Development working with University and Research Institutes, Koala Action Group and Local NRM Groups	High Priority (1-3 years)	Figure 6 and Figure 7	Environment Levy and external funding sources
Identify significant regional corridors from west to east and apply development provisions for the protection and enhancement of these corridors.	Significant regional corridors identified and specific development provisions in these areas are implemented.	Planning and Development	High Priority (1-3 years)	N/A	Staff resources
Monitor the progress of current studies on the impacts of climate change on koalas and their use of habitat.	Review current studies and outcomes.	Planning and Development working with University and Research Institutes, Koala Action Group and Local NRM Groups	On-going	N/A	Staff resources

Reporting, monitoring and plan review

Regular maintenance of databases and mapping should be conducted to ensure that accurate information can be used to inform decisions that may affect koalas or their habitat.

Annual progress tracking of the Action Plan will identify opportunities for improvement and ensure any changes are made in line with relevant legislation.

The Koala Conservation Management Plan will be reviewed in full after five years to ensure that actions remain applicable for threat mitigation as they increase or decrease over time.

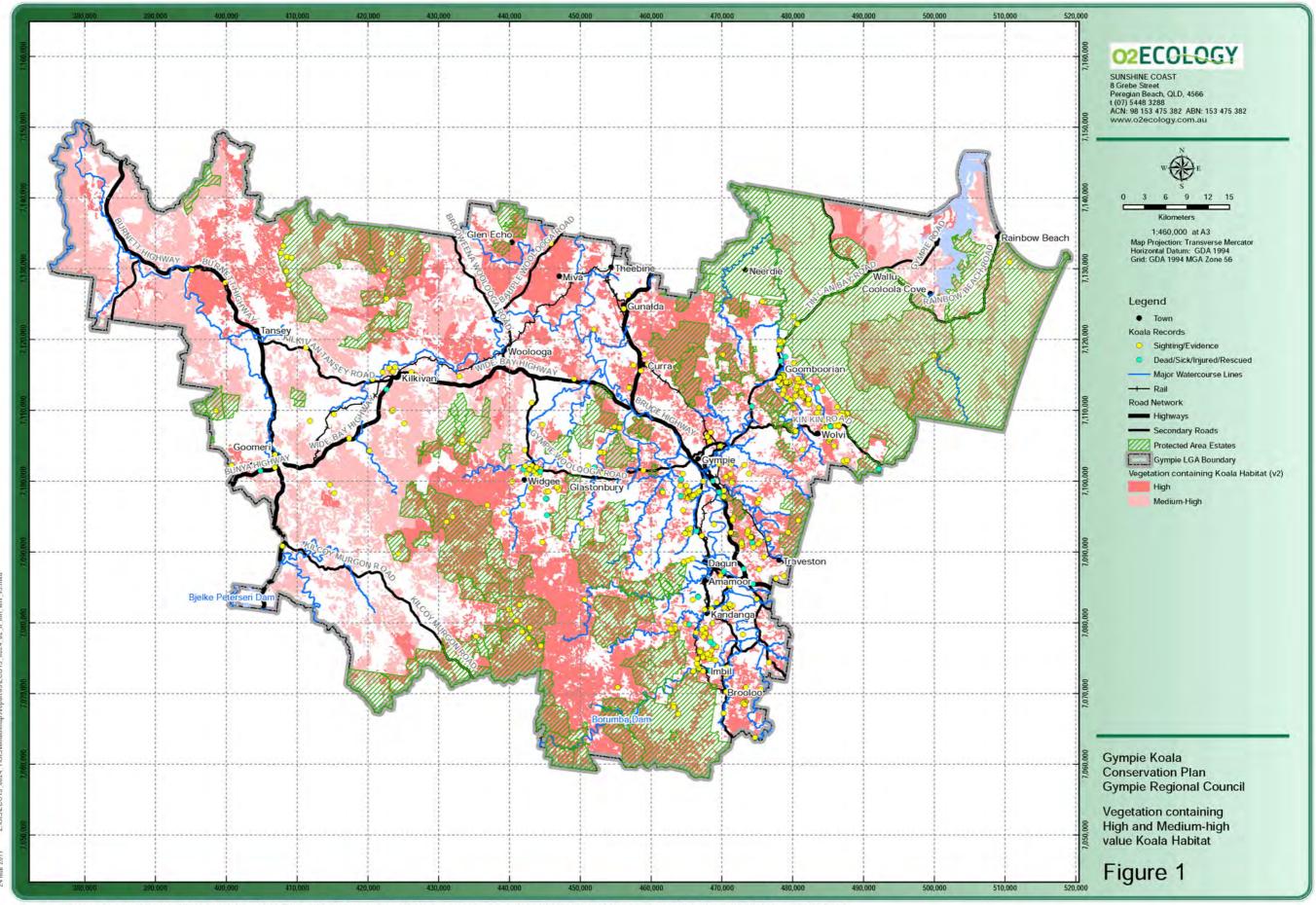
Conclusions

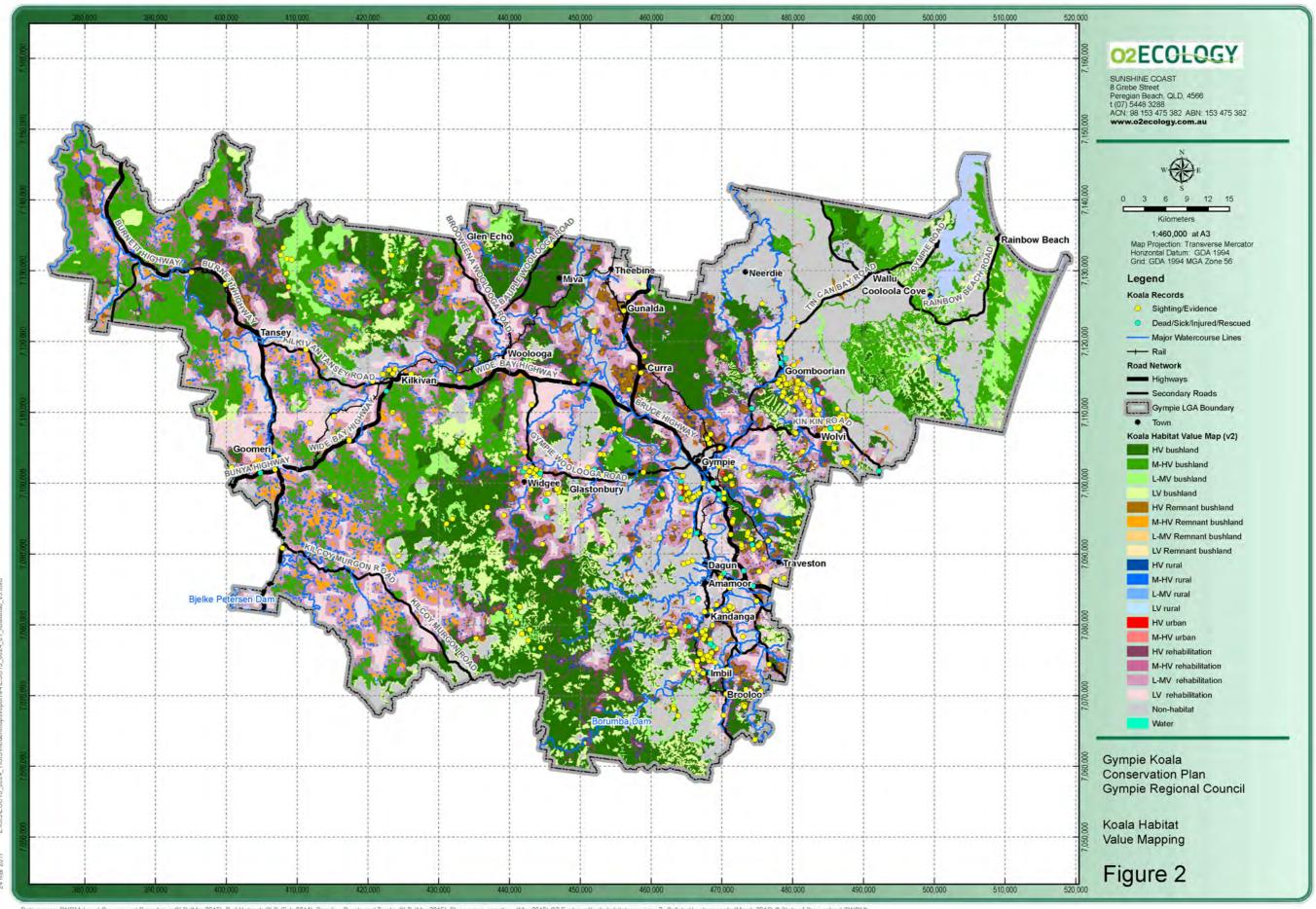
Vegetation clearing remains the largest threat to declining koala populations. The other considerable threat to declining koala populations is the fragmentation of habitat from development and infrastructure, causing loss of connectivity and exposing koalas to a number of other associated threats such as vehicle strikes and dog attacks.

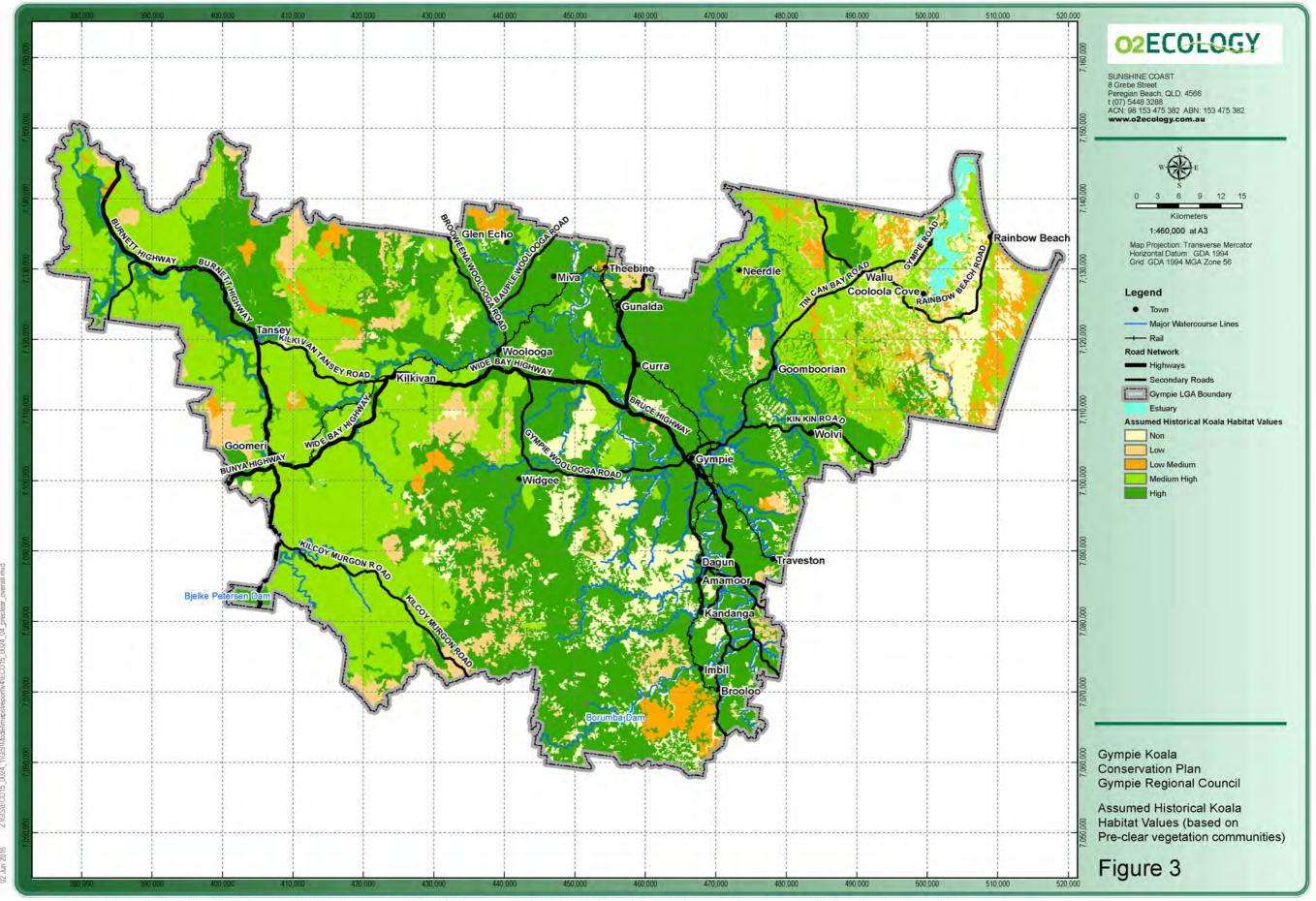
Apart from conservation and works programs designed to protect and restore koala habitat on both private and Council property, planning tools can be very valuable in koala conservation. Analysis of high resolution koala habitat mapping (including high value koala habitat, areas suitable for restoration and vital corridor links) can assist with informed strategic decisions particularly with regards to future development areas.

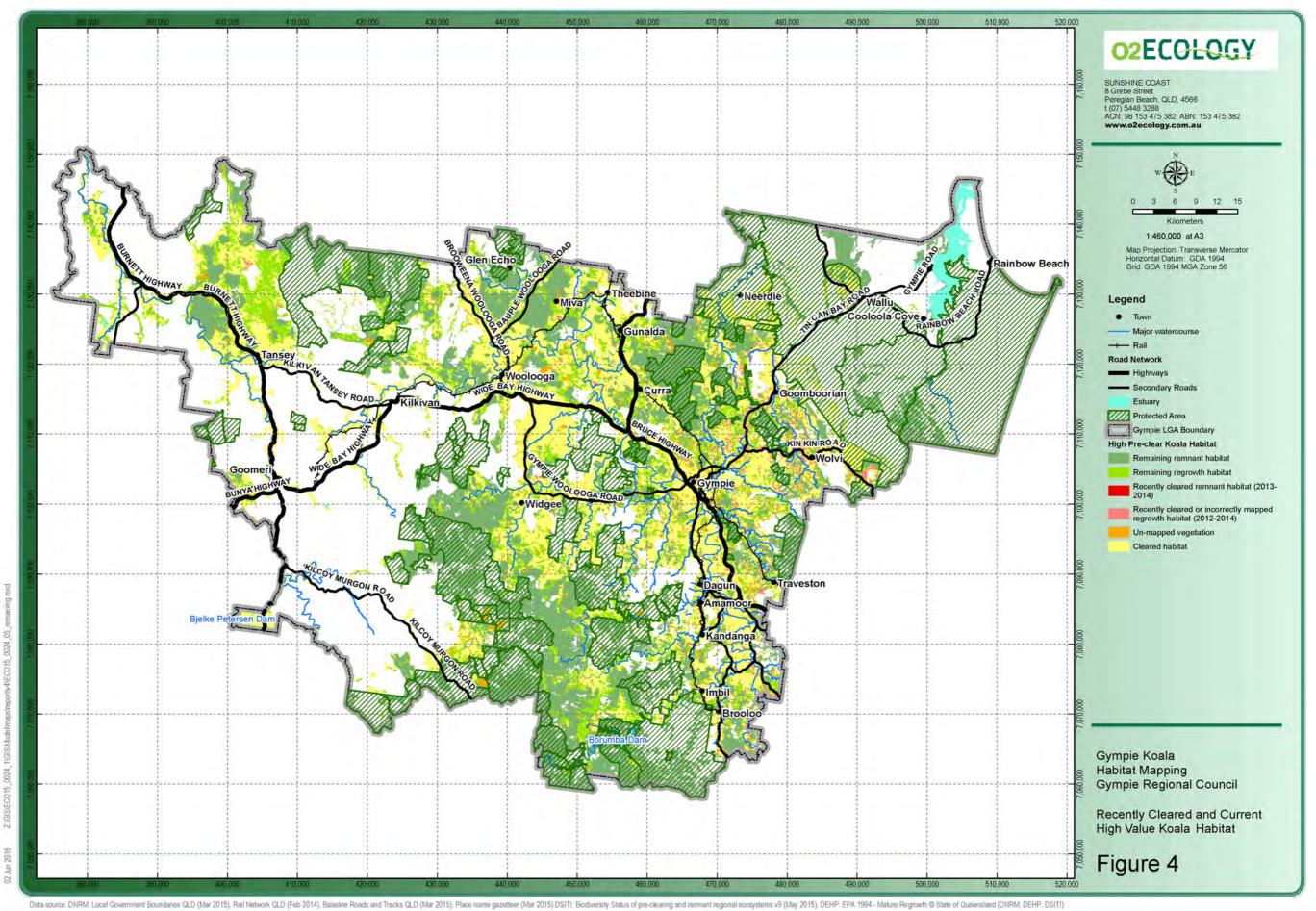
It is important to reiterate that the greater responsibility for koala protection lies with the Federal and State Government. By adopting this KCMP Council is playing a role to help sustain koala populations in the Gympie region through good planning and management decisions.

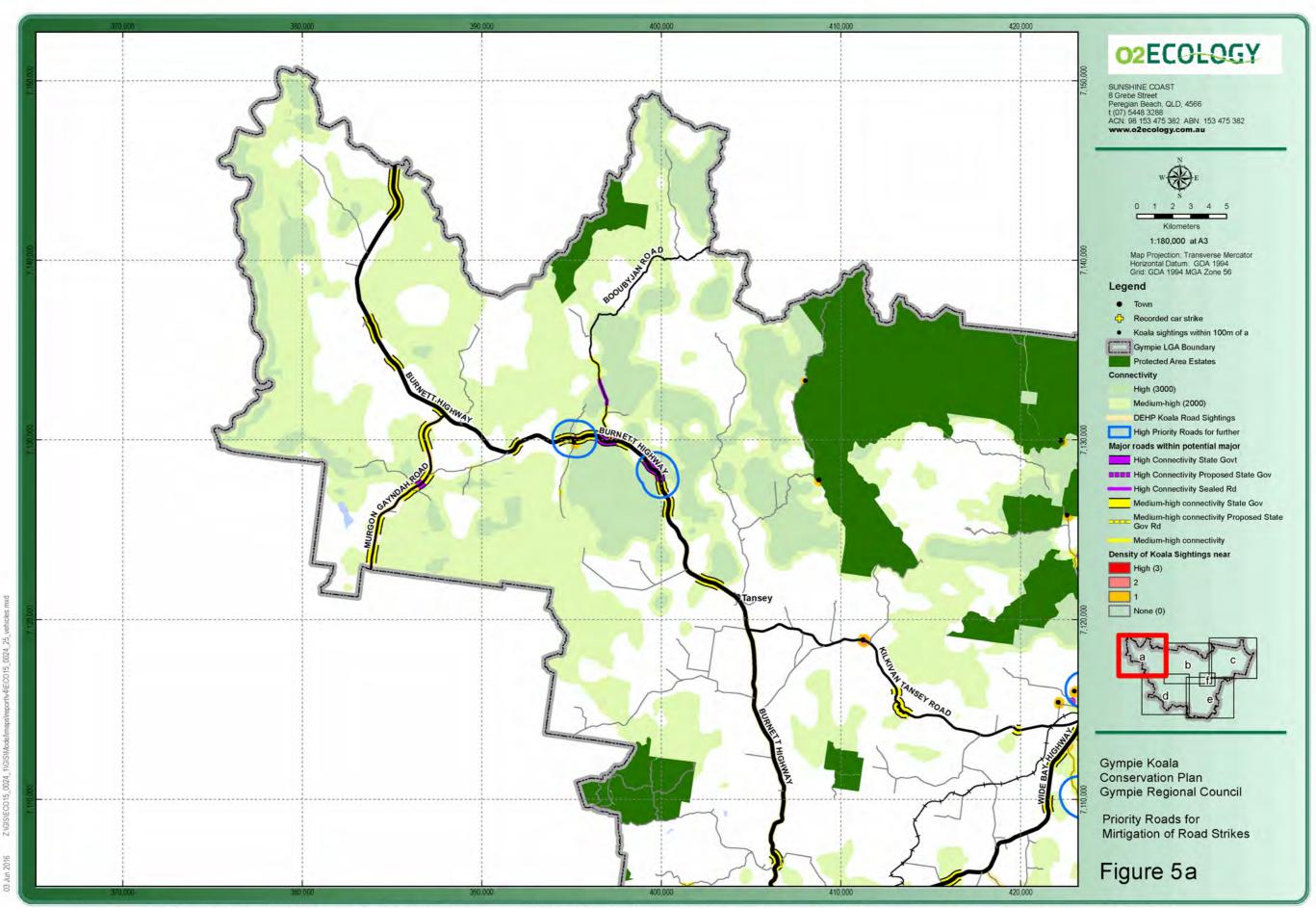




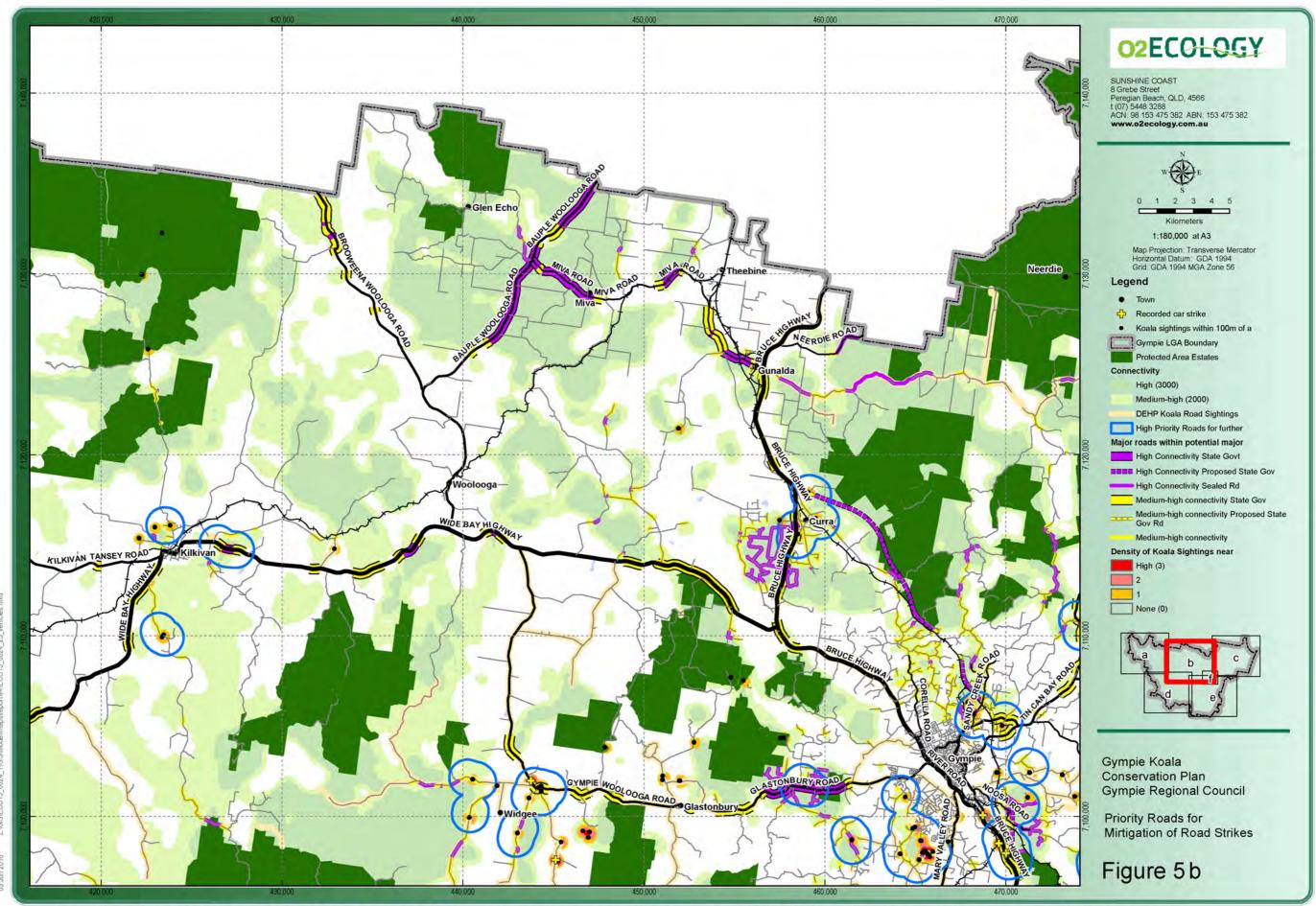




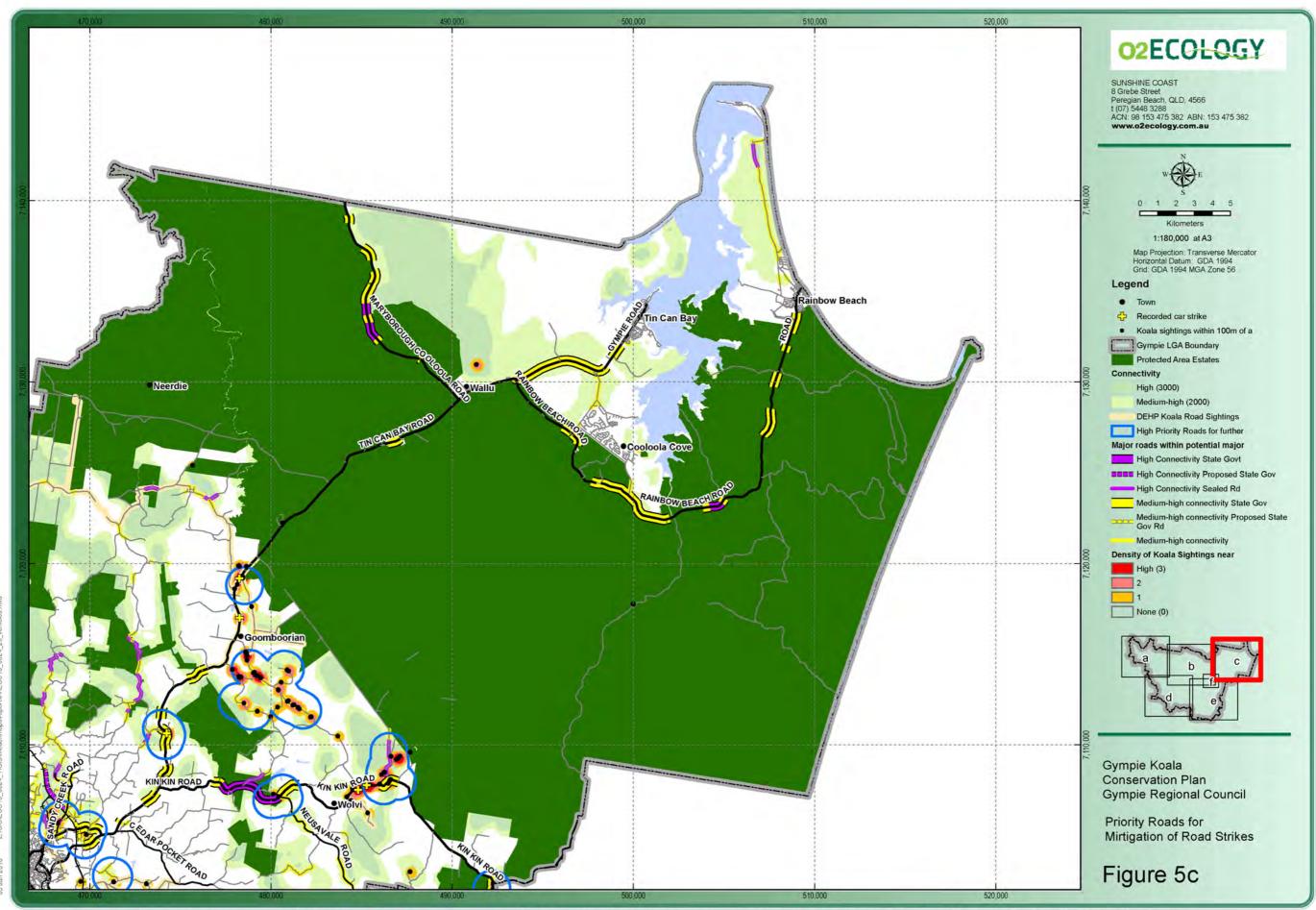




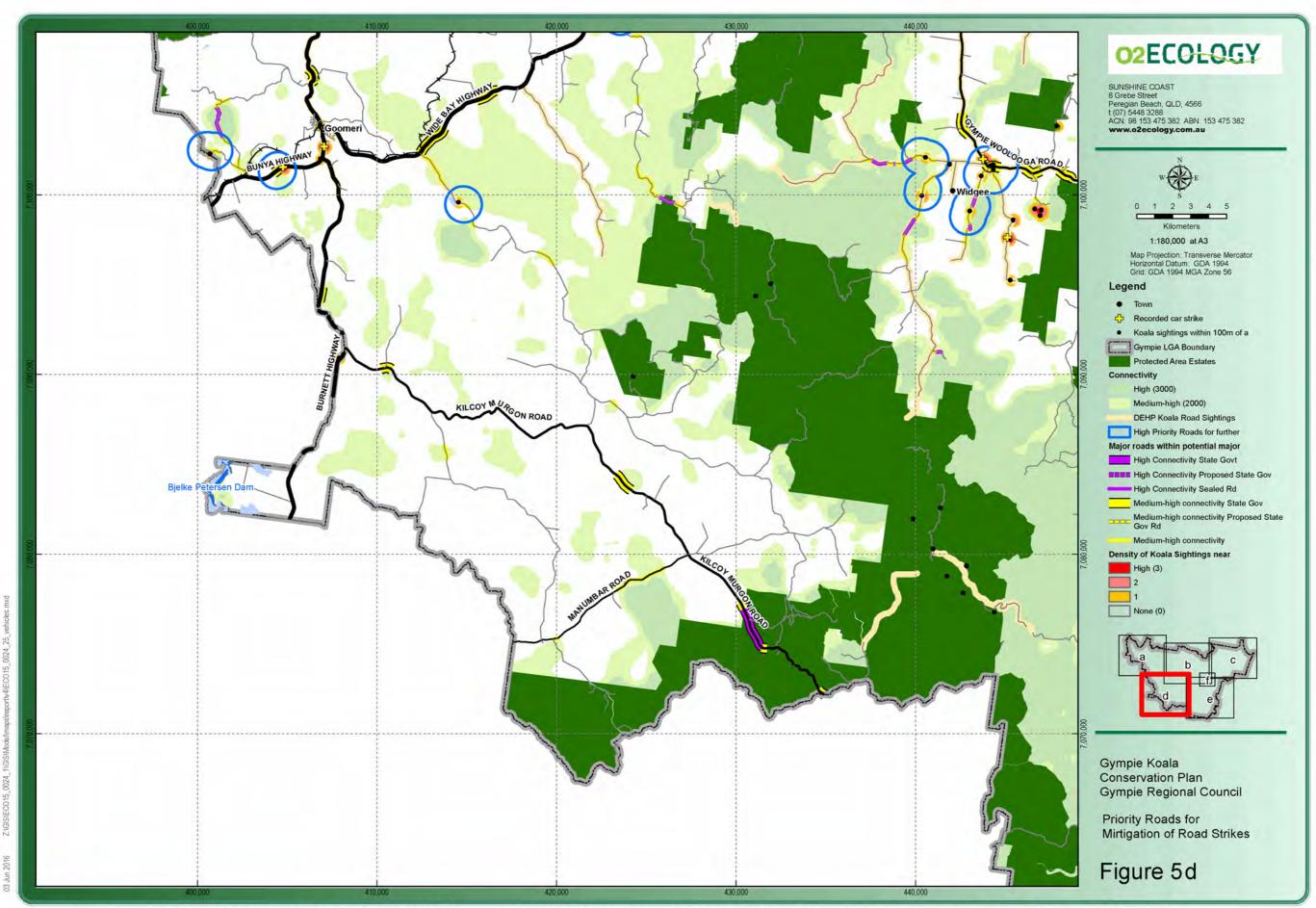
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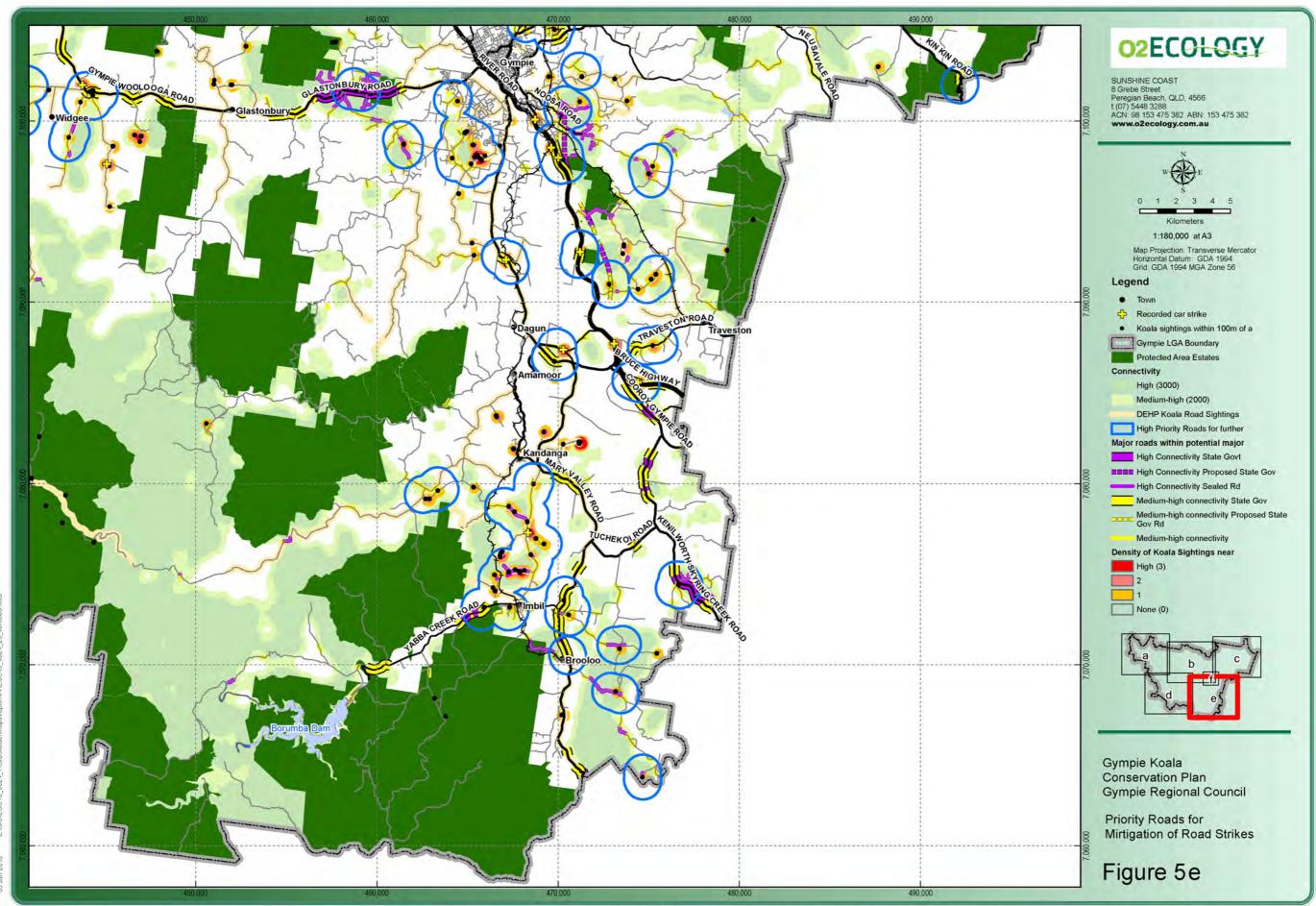
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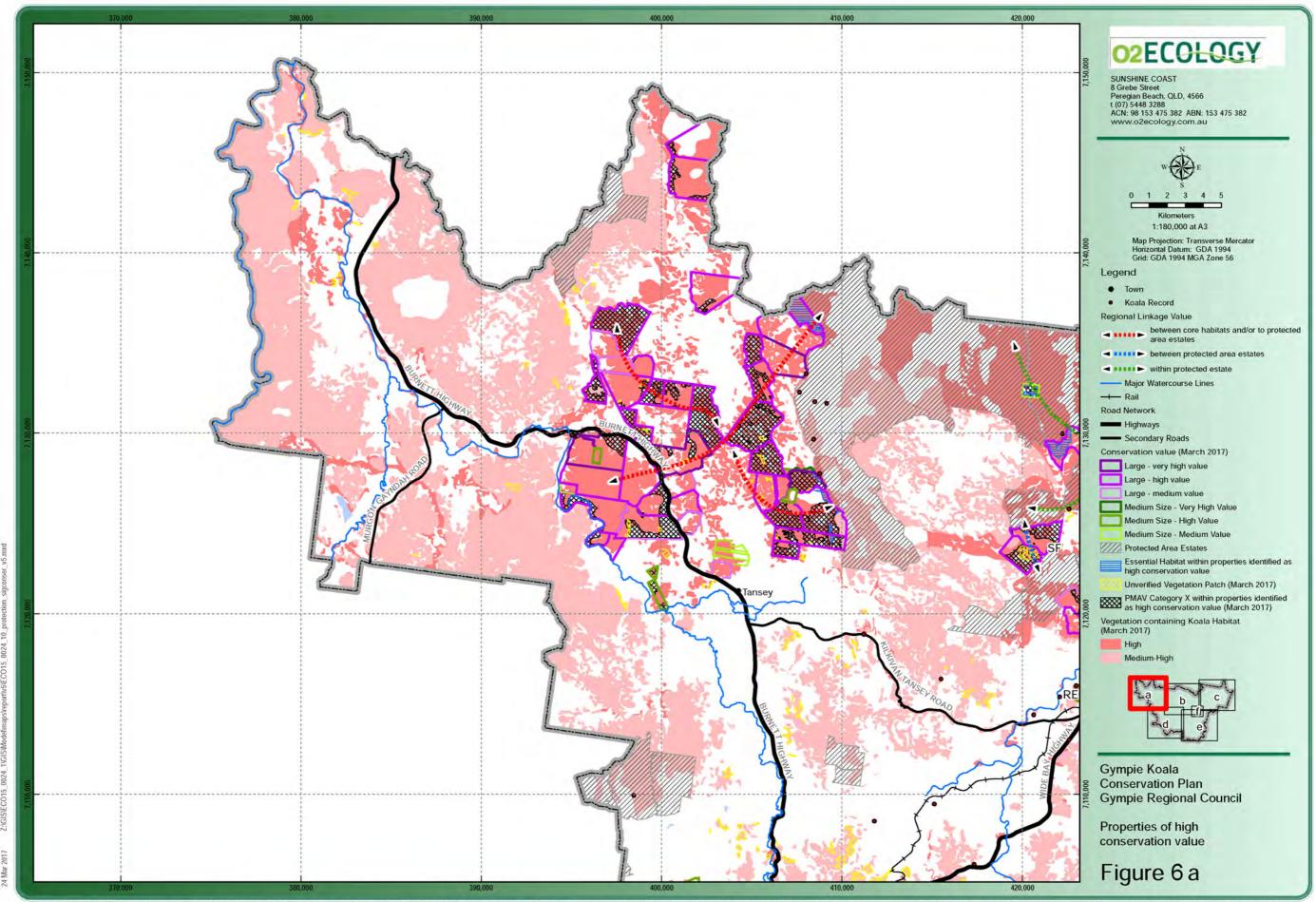
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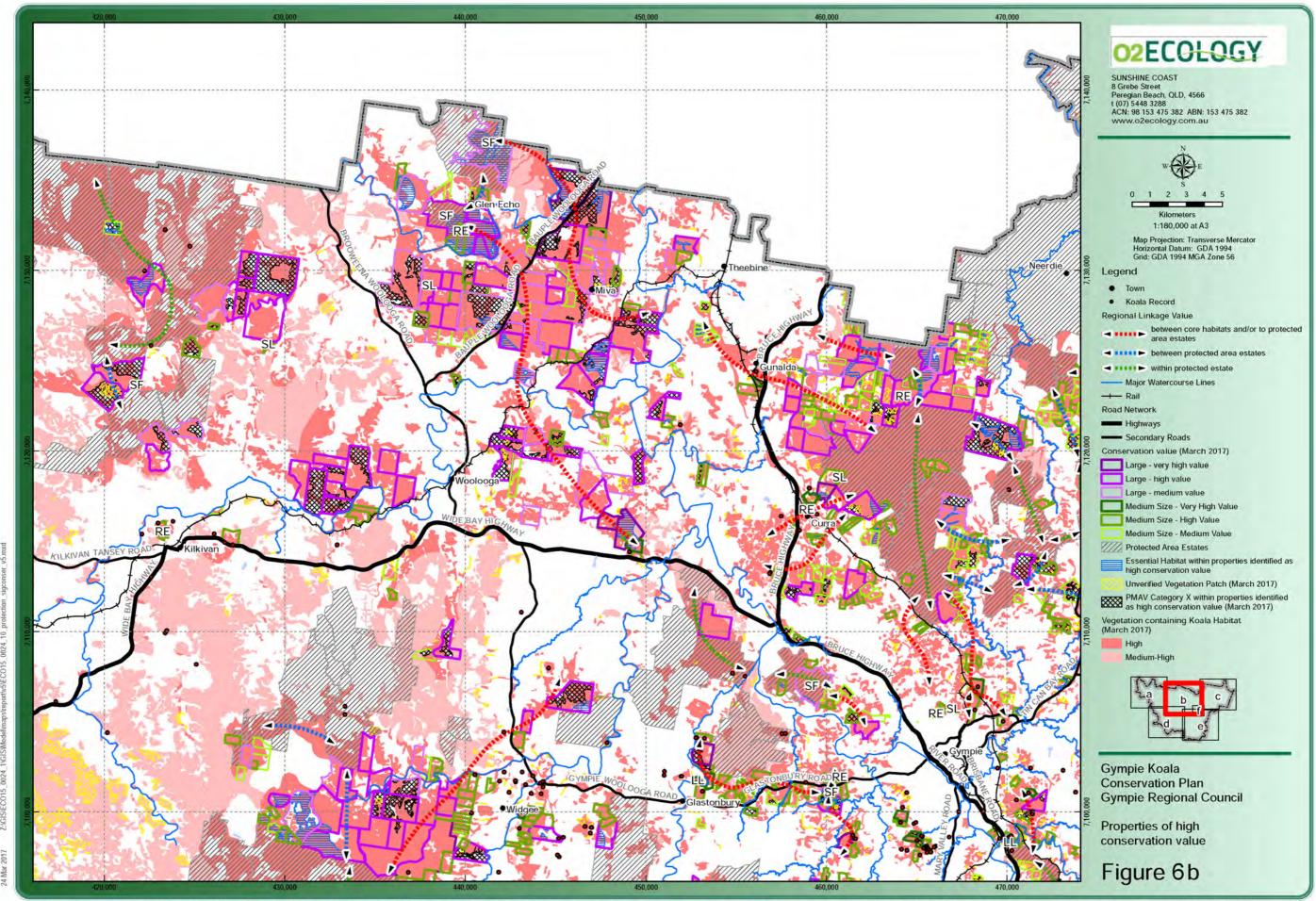
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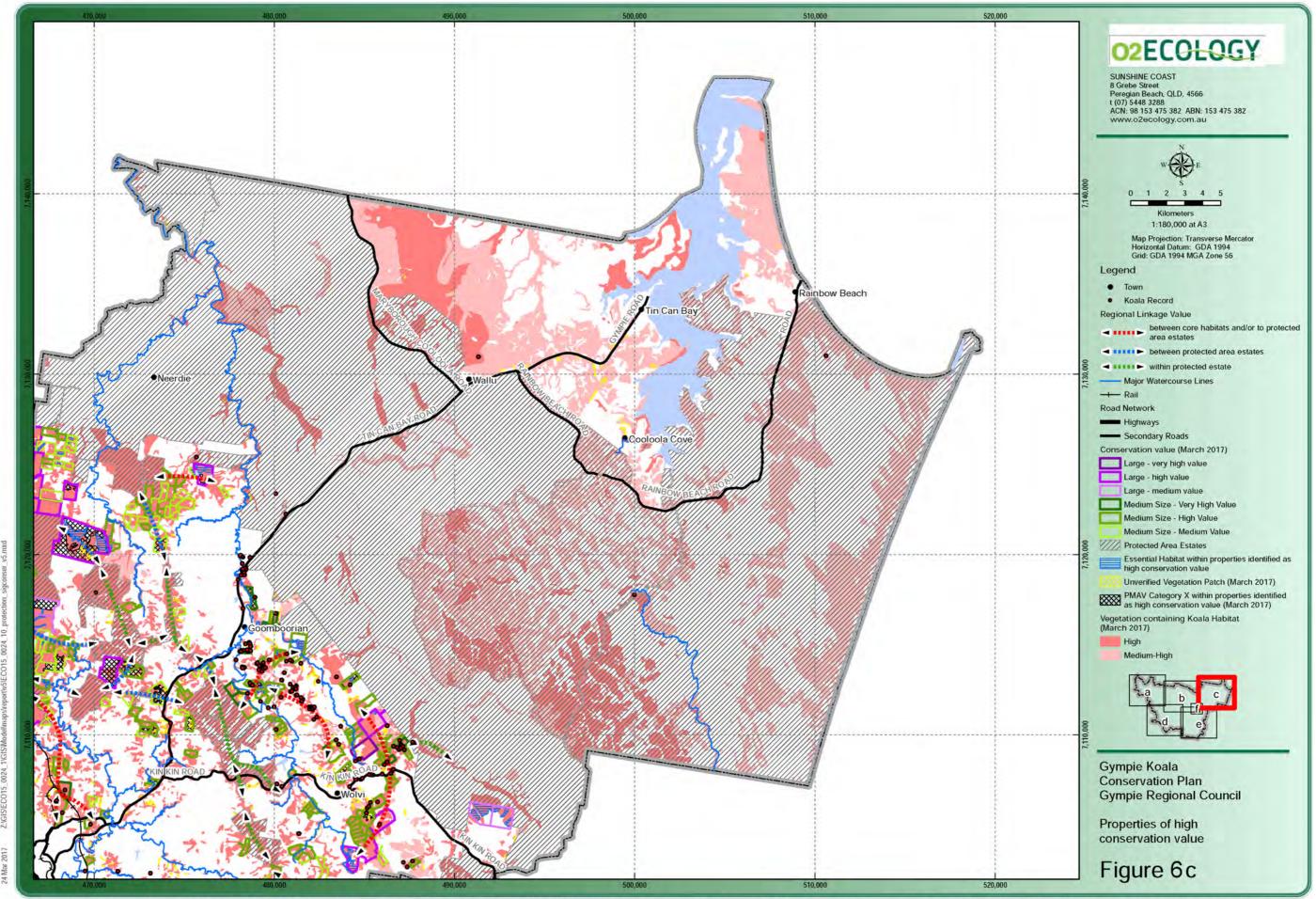
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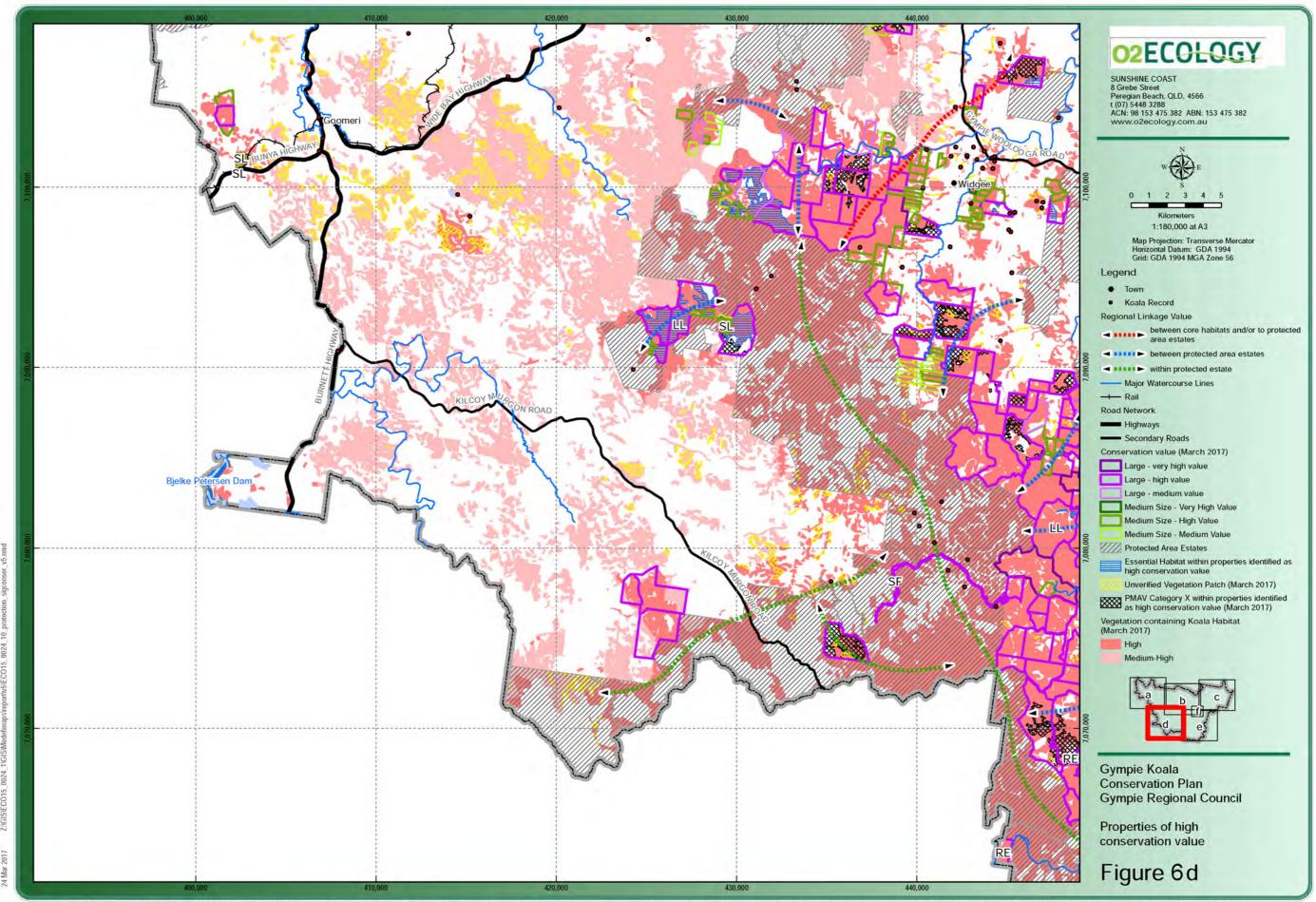
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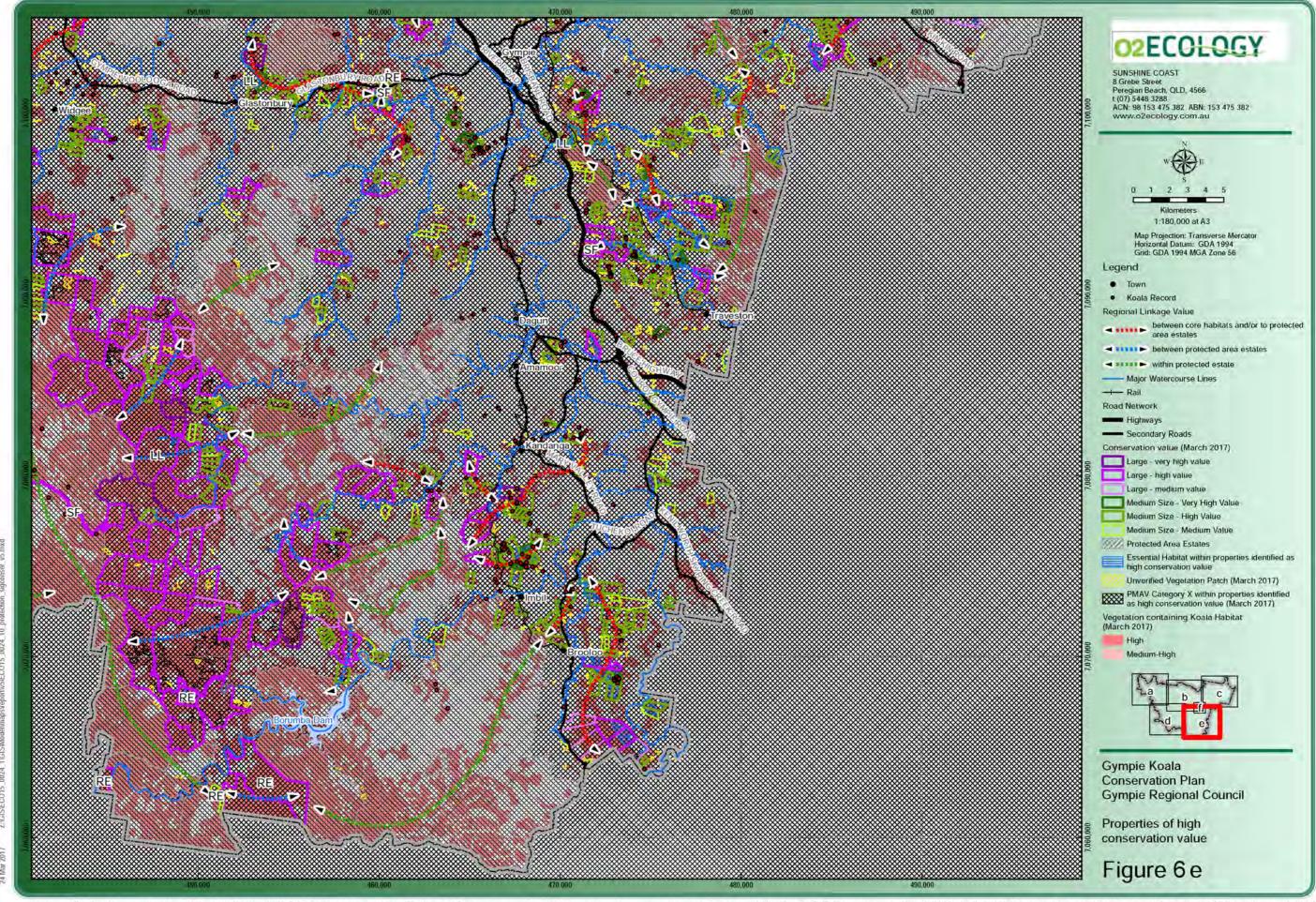
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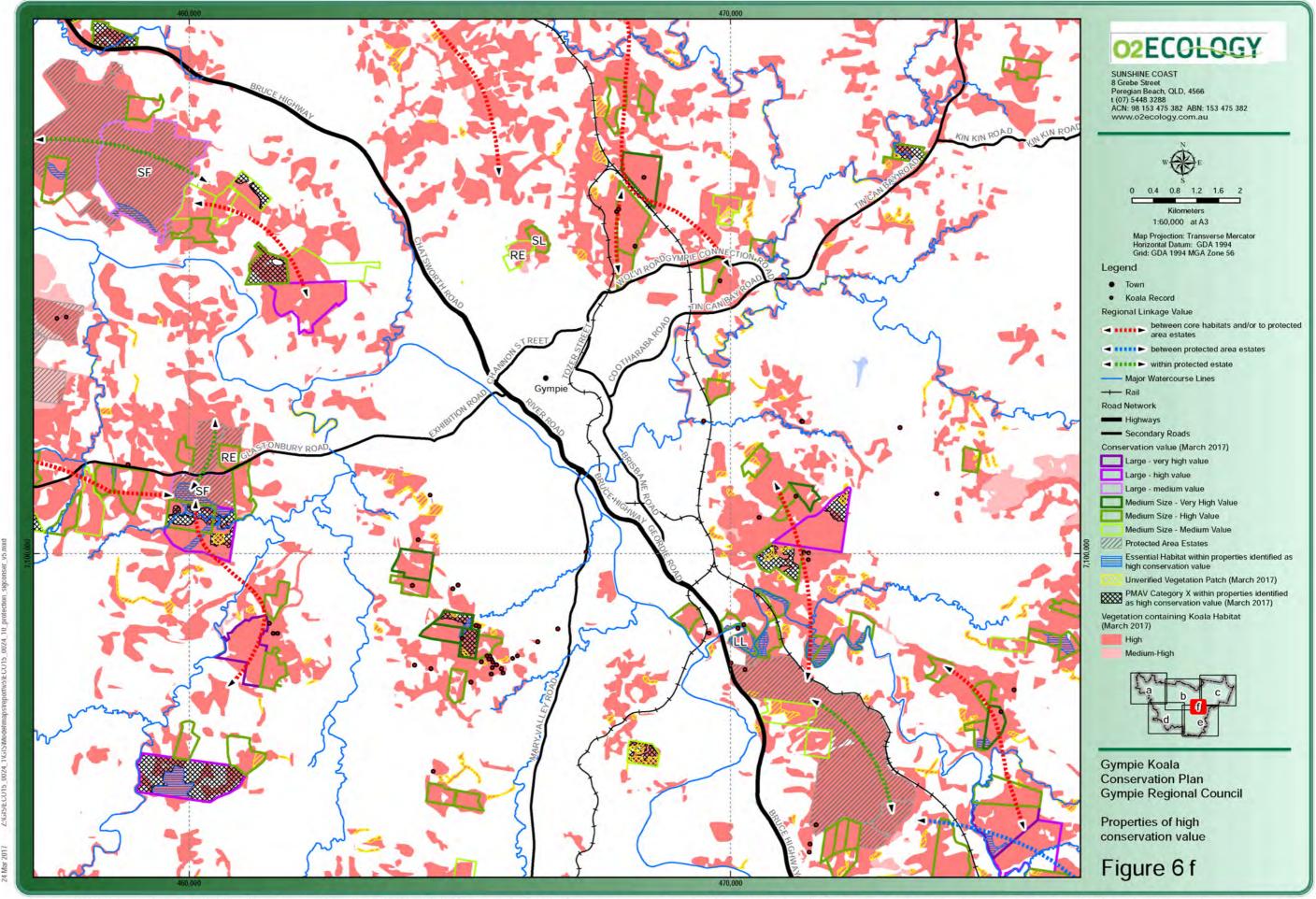
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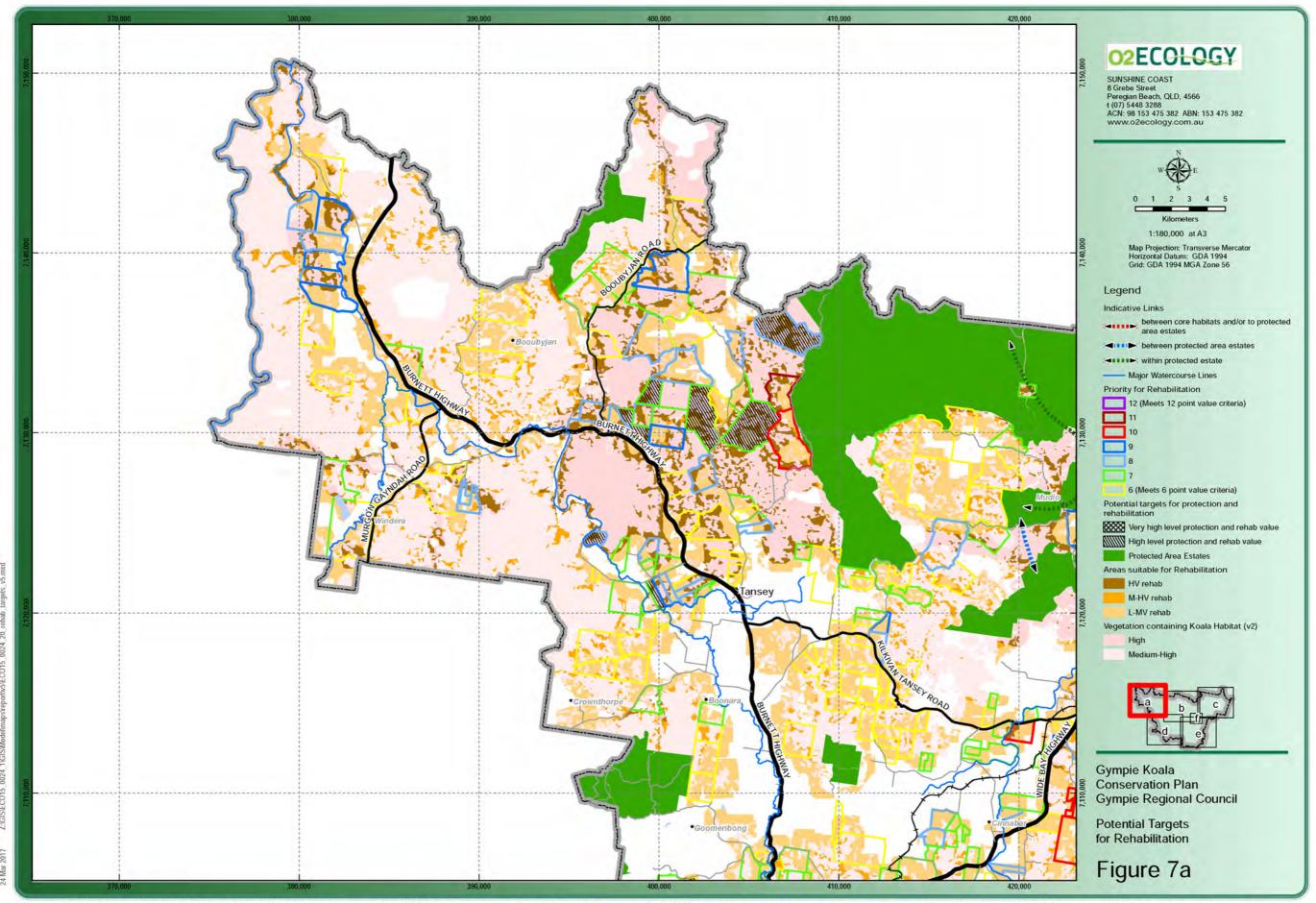
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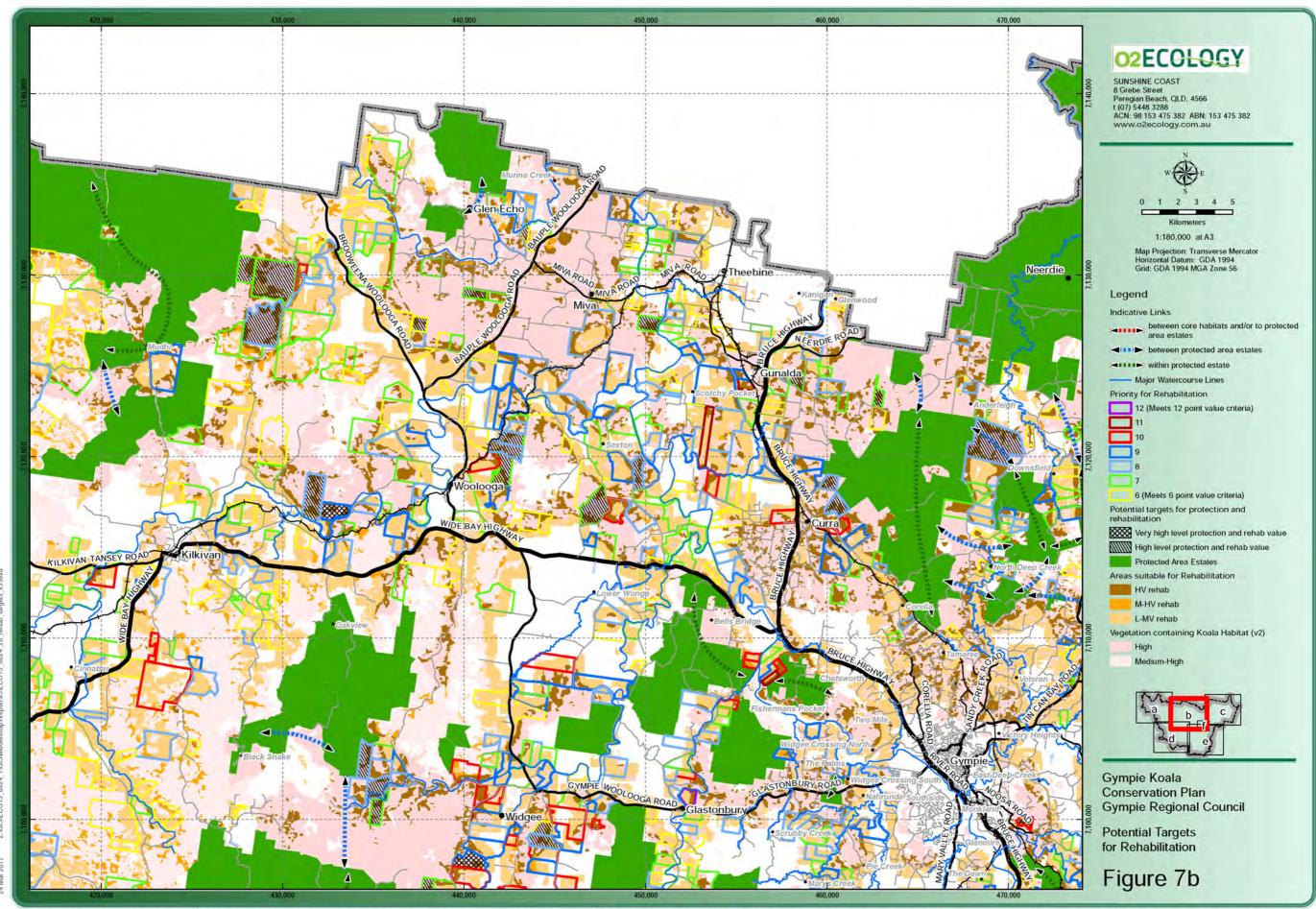


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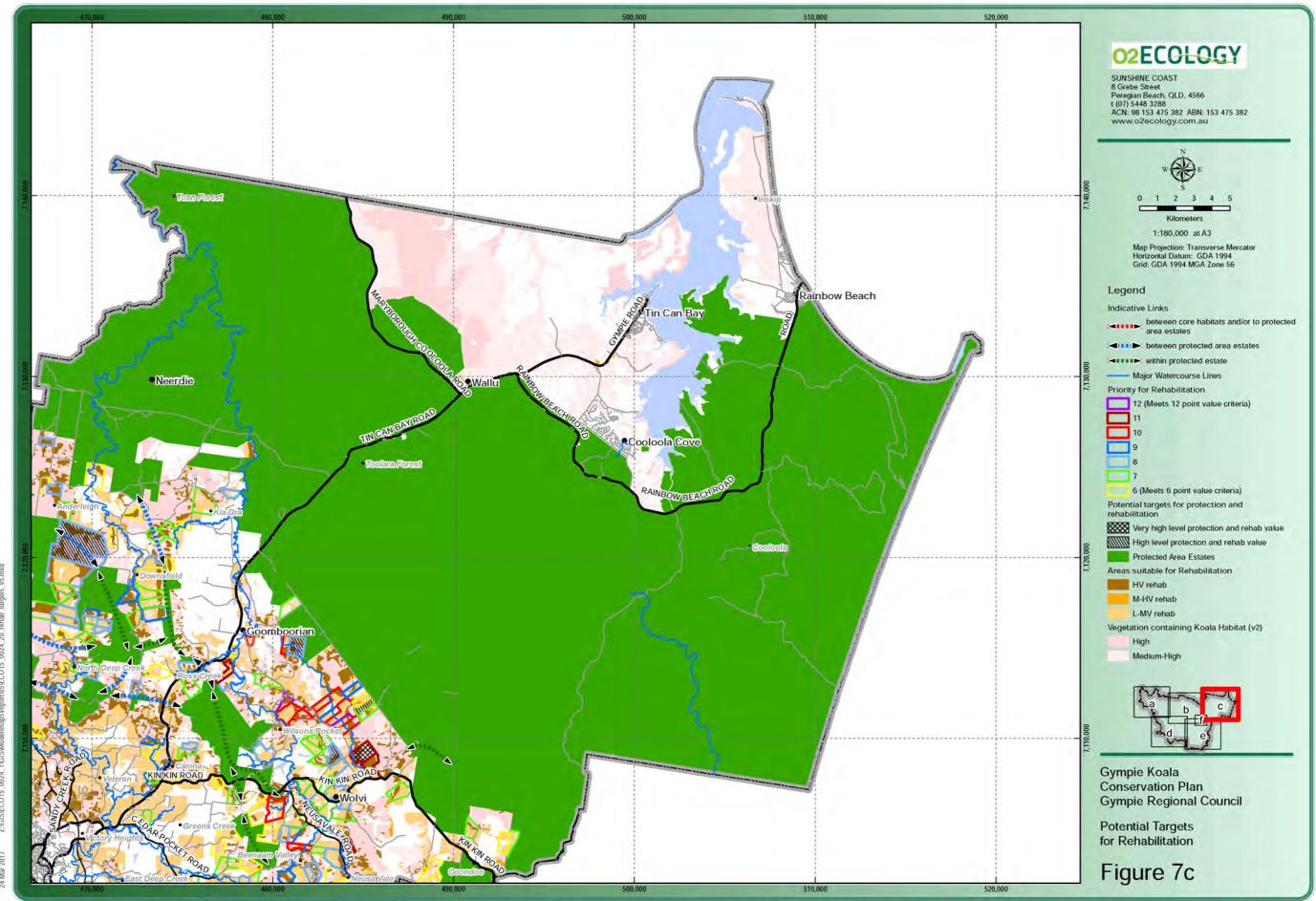


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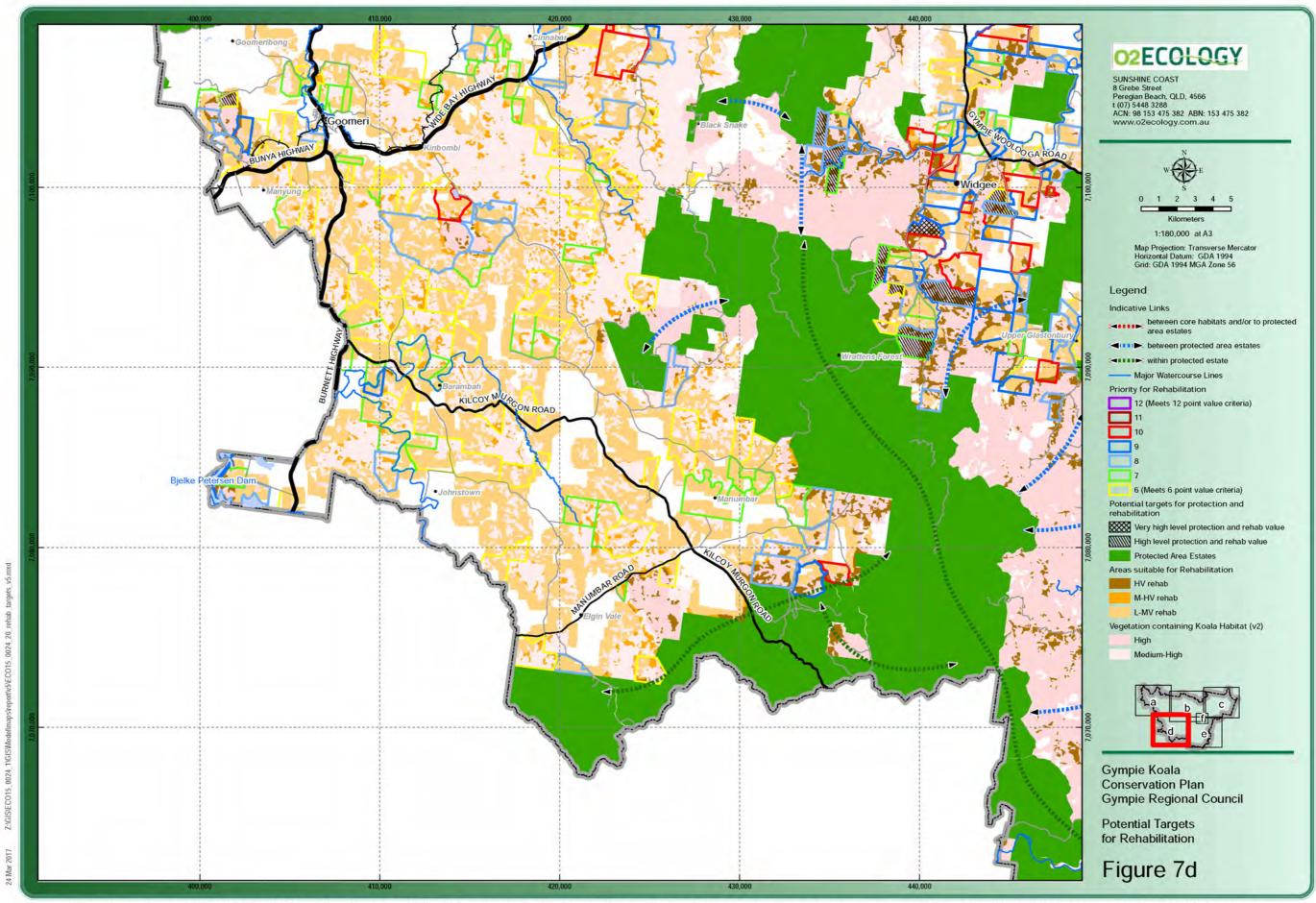
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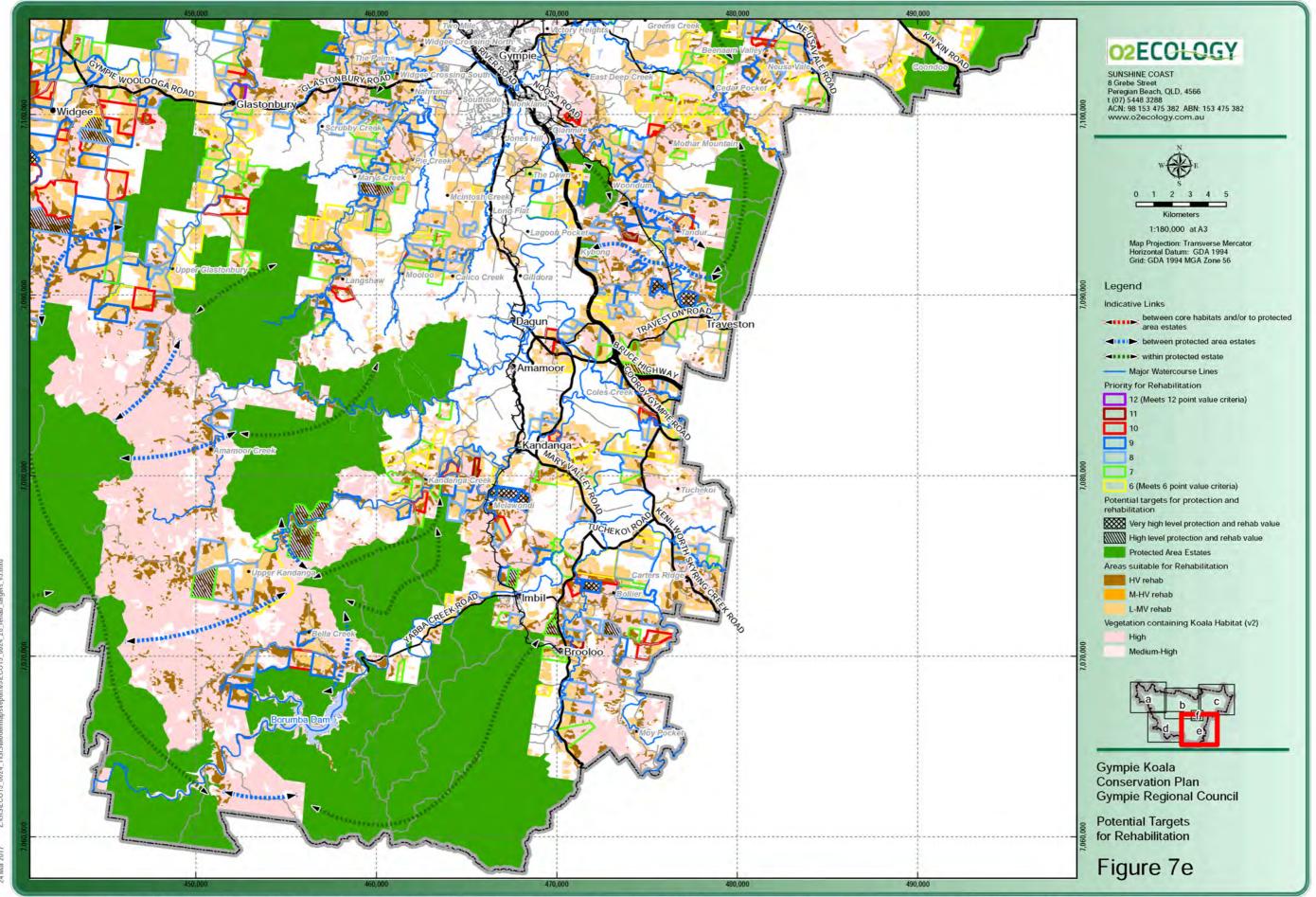
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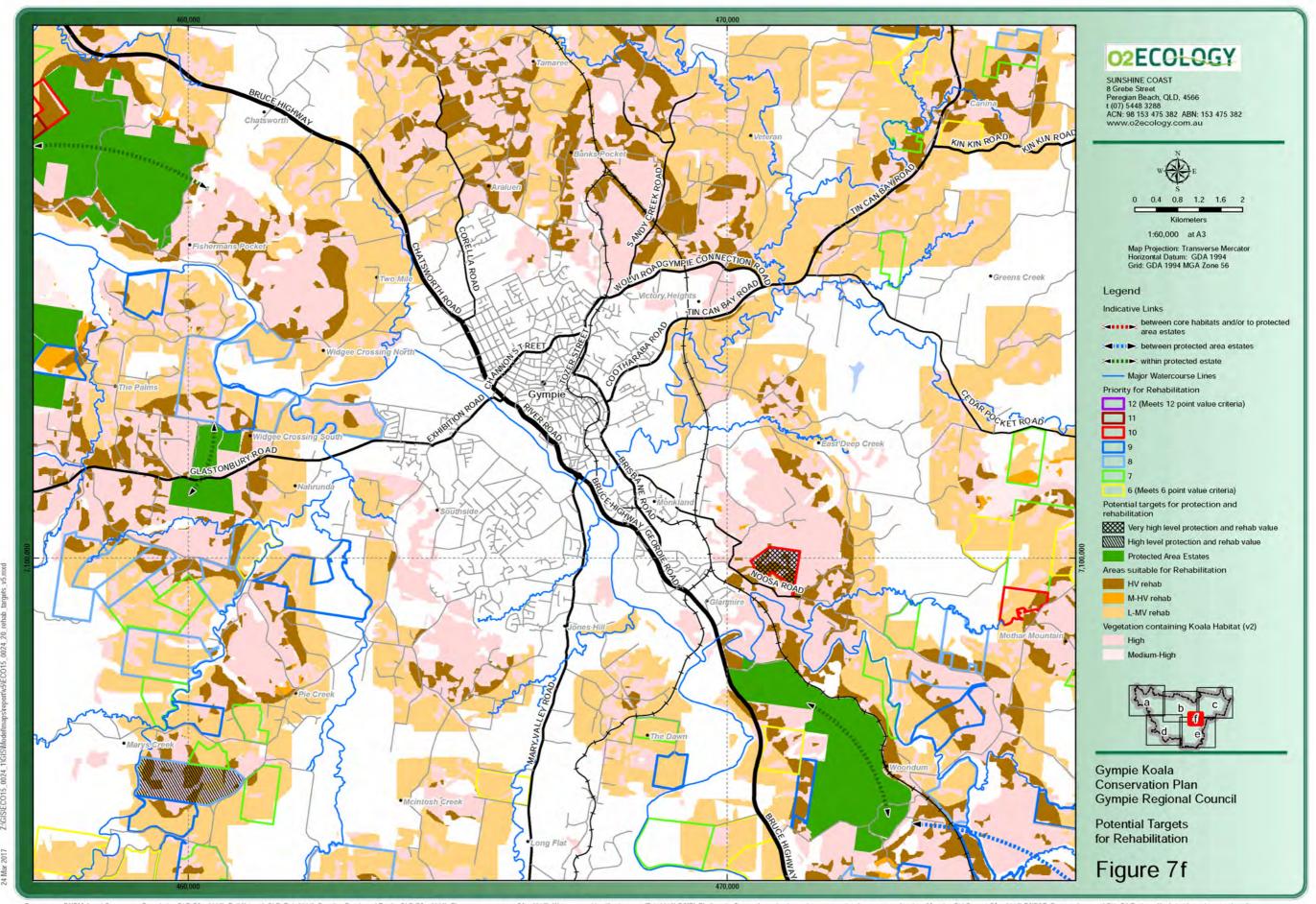
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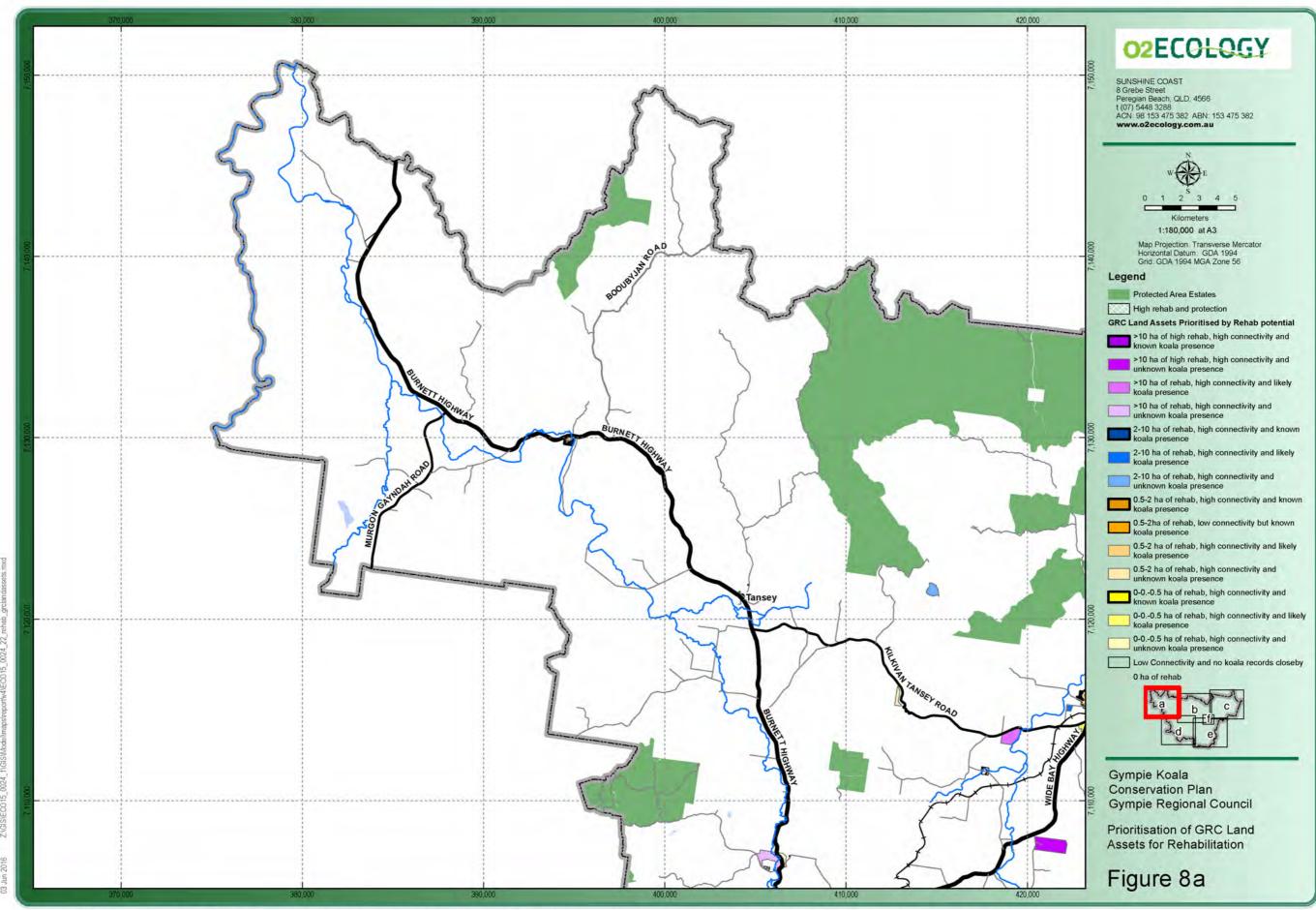


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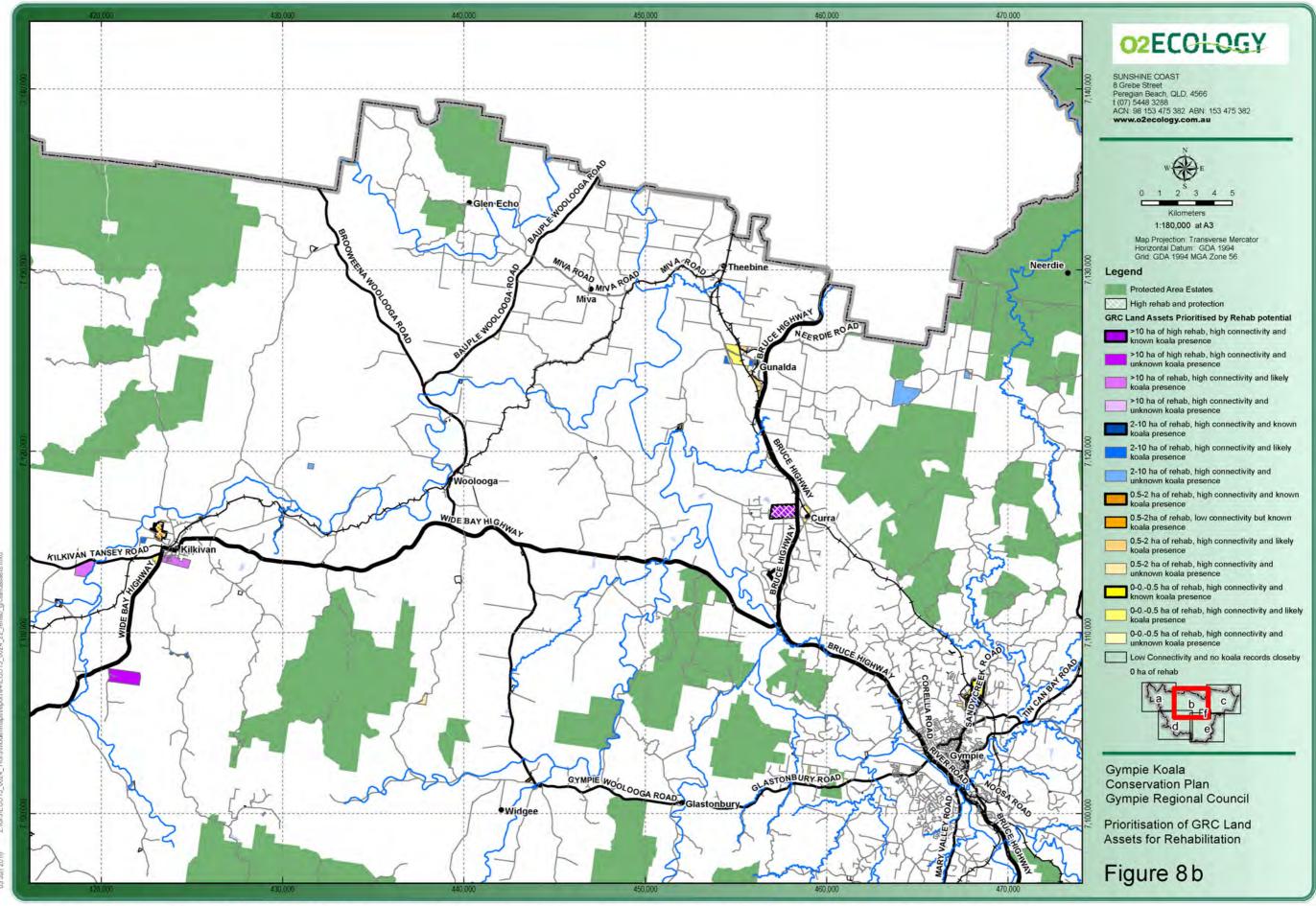


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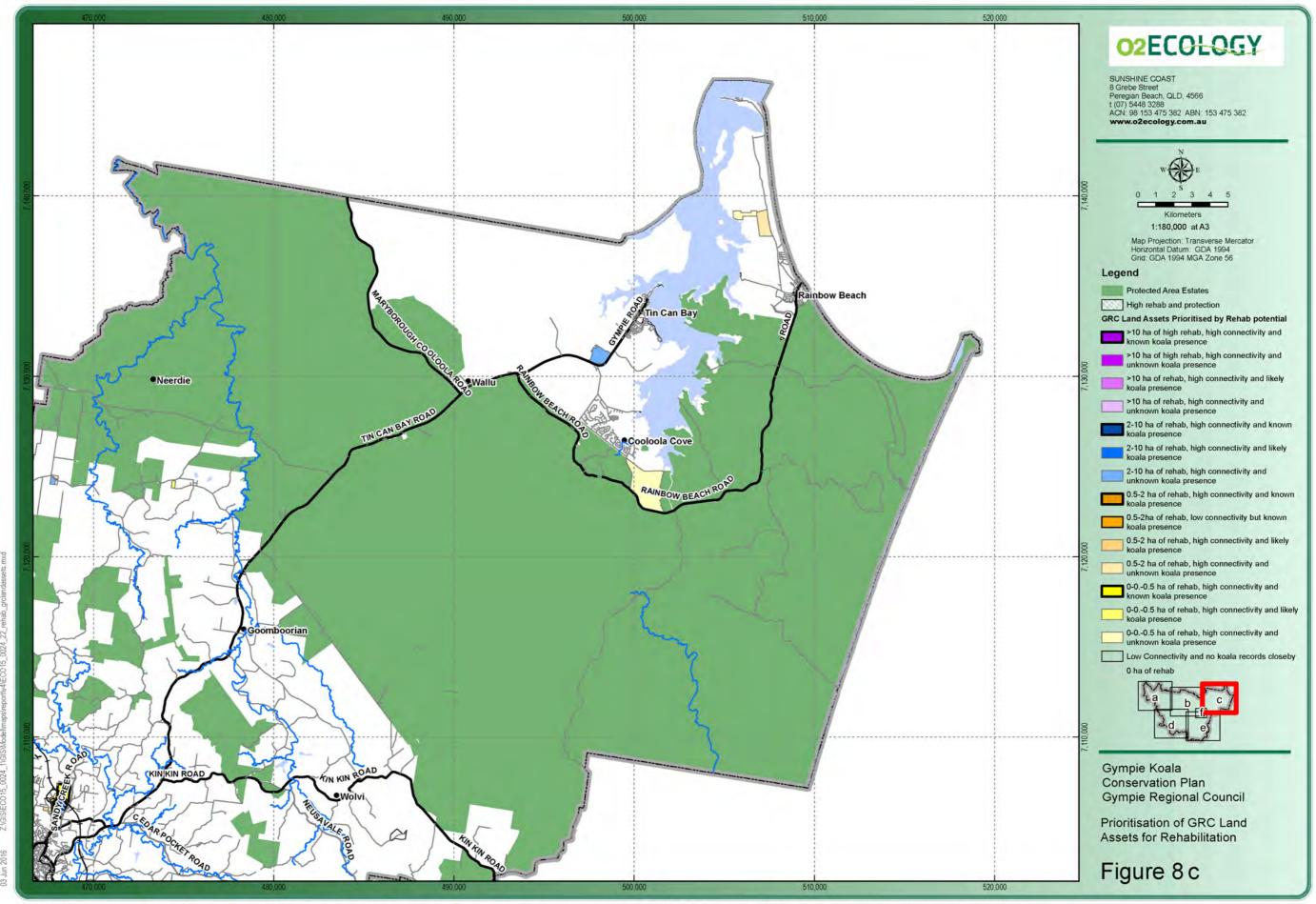
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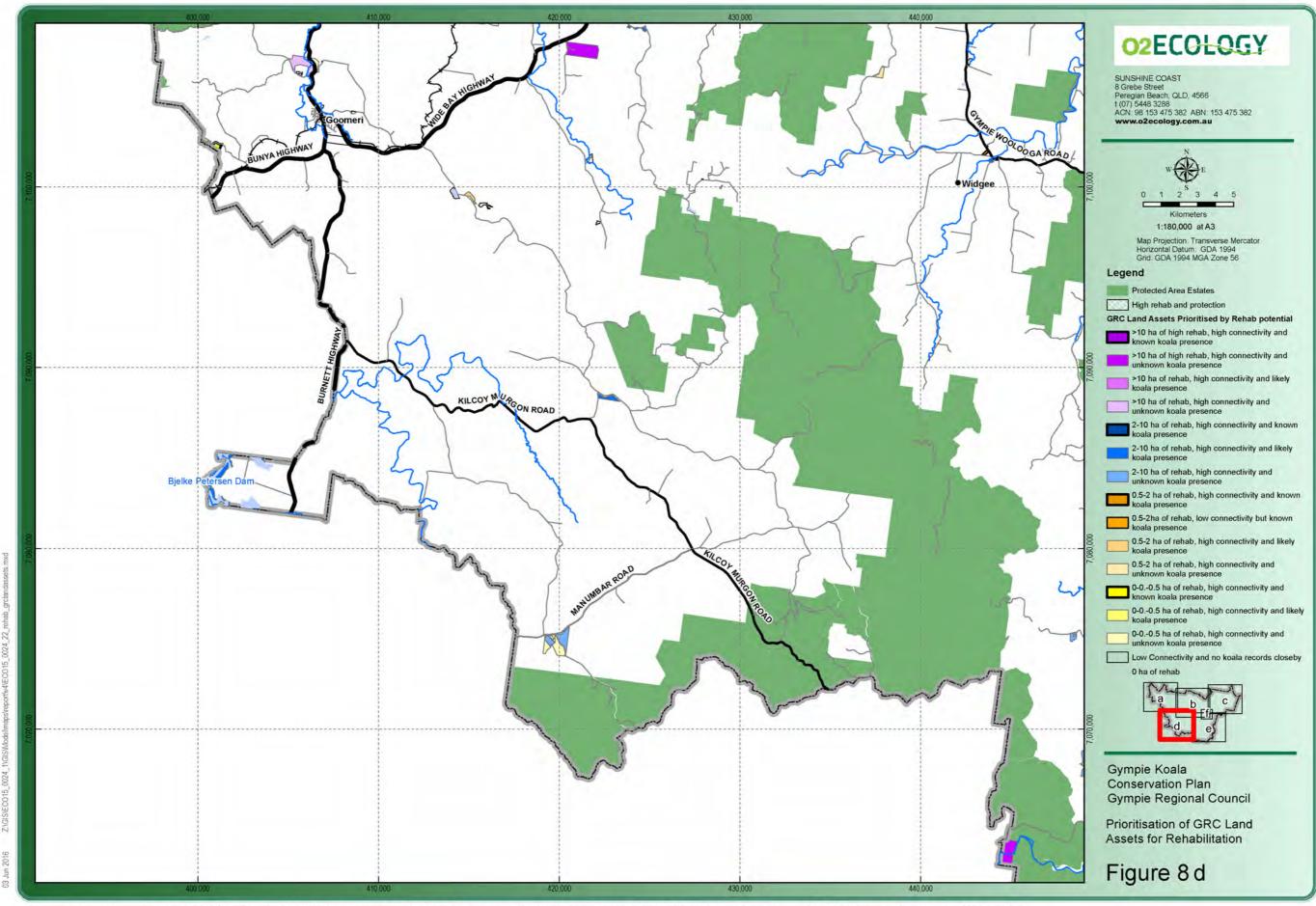
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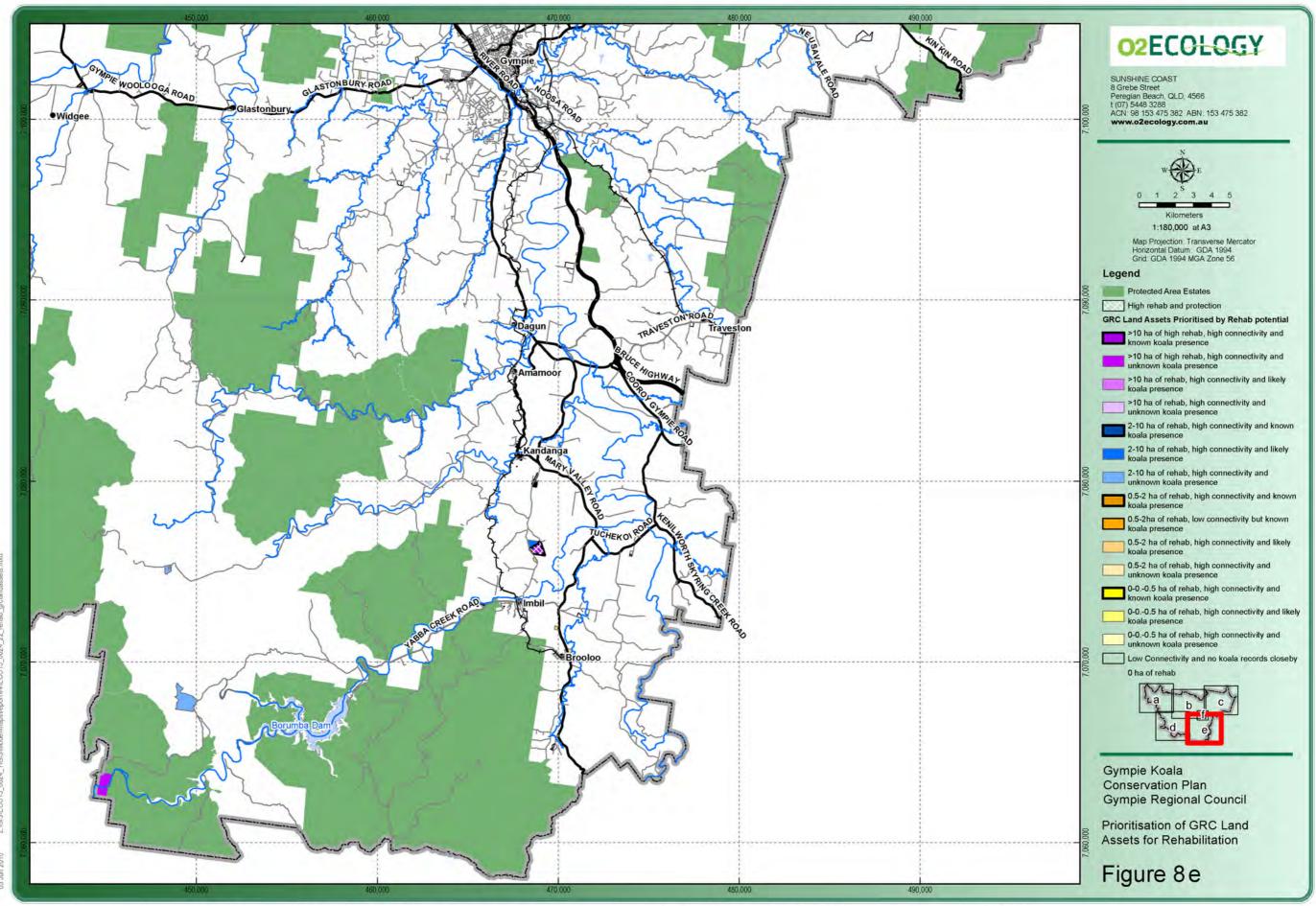
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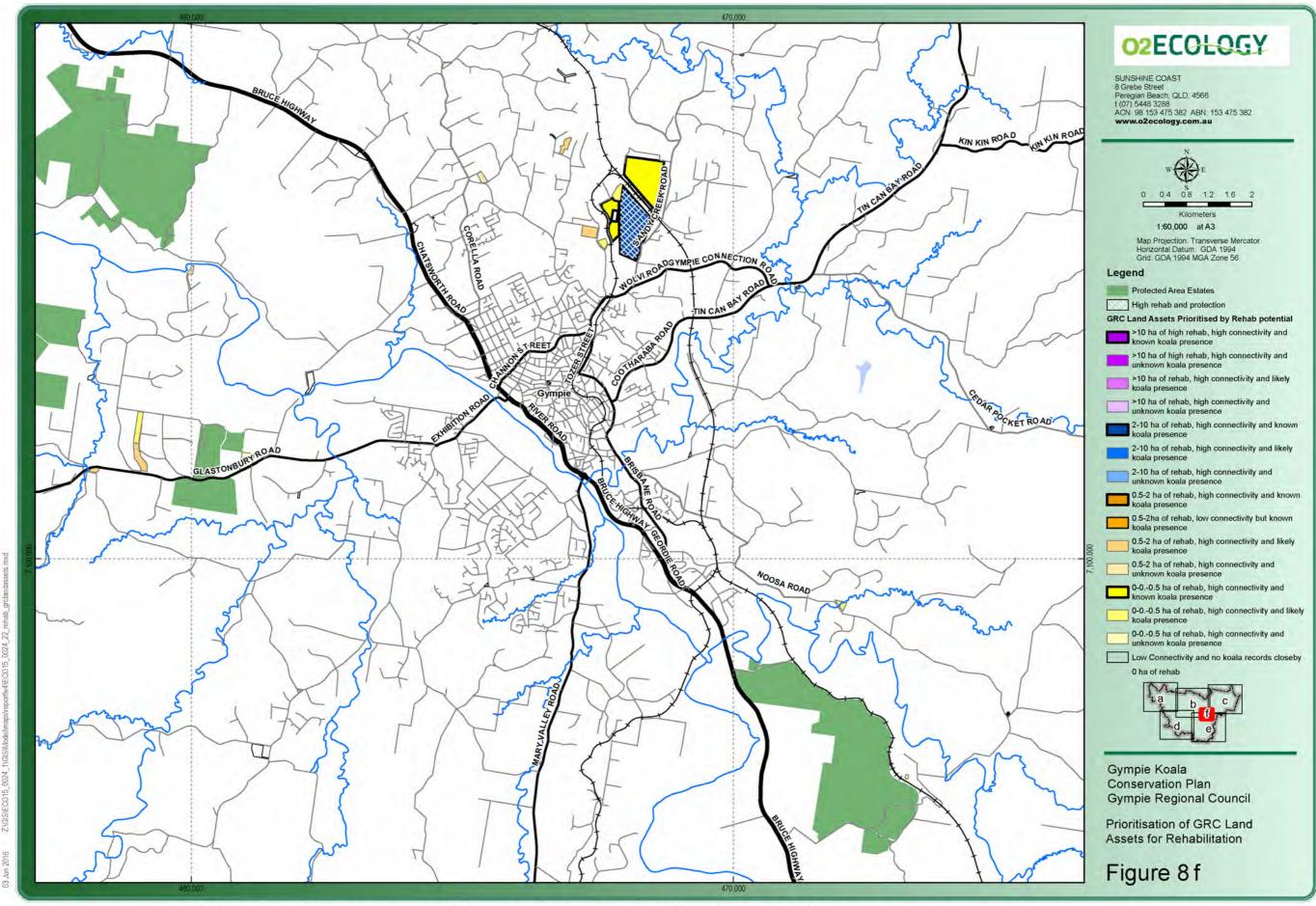
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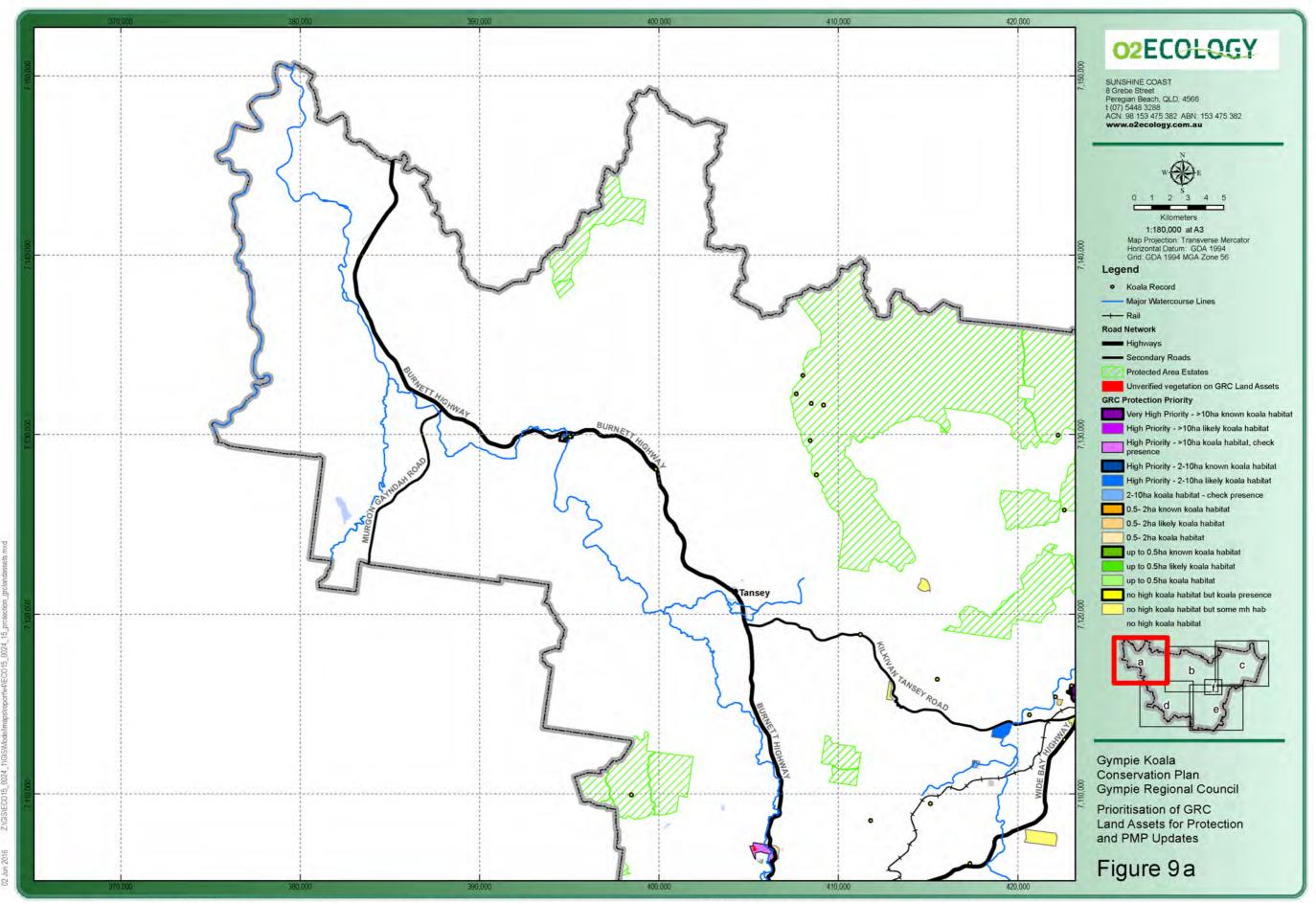
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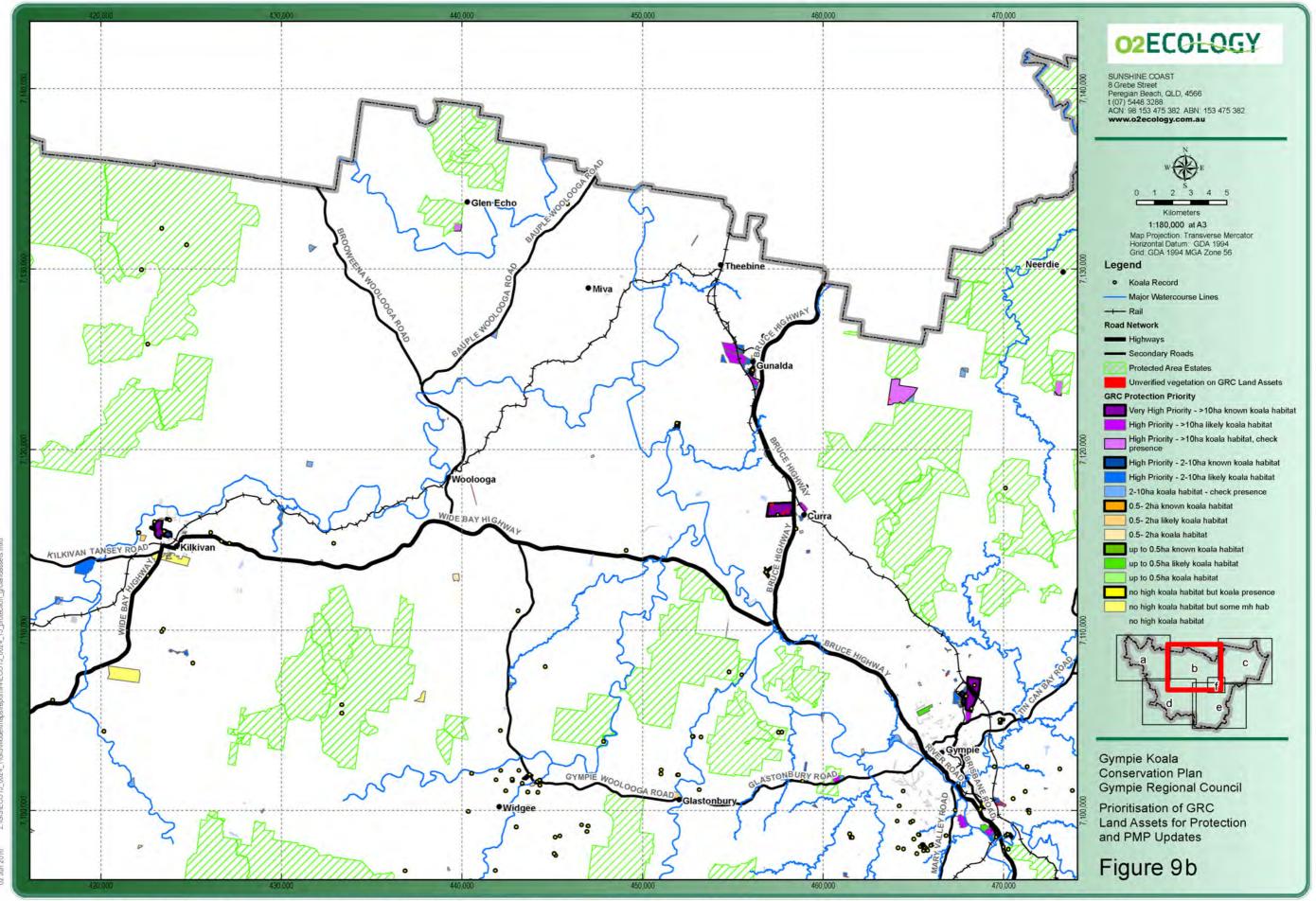
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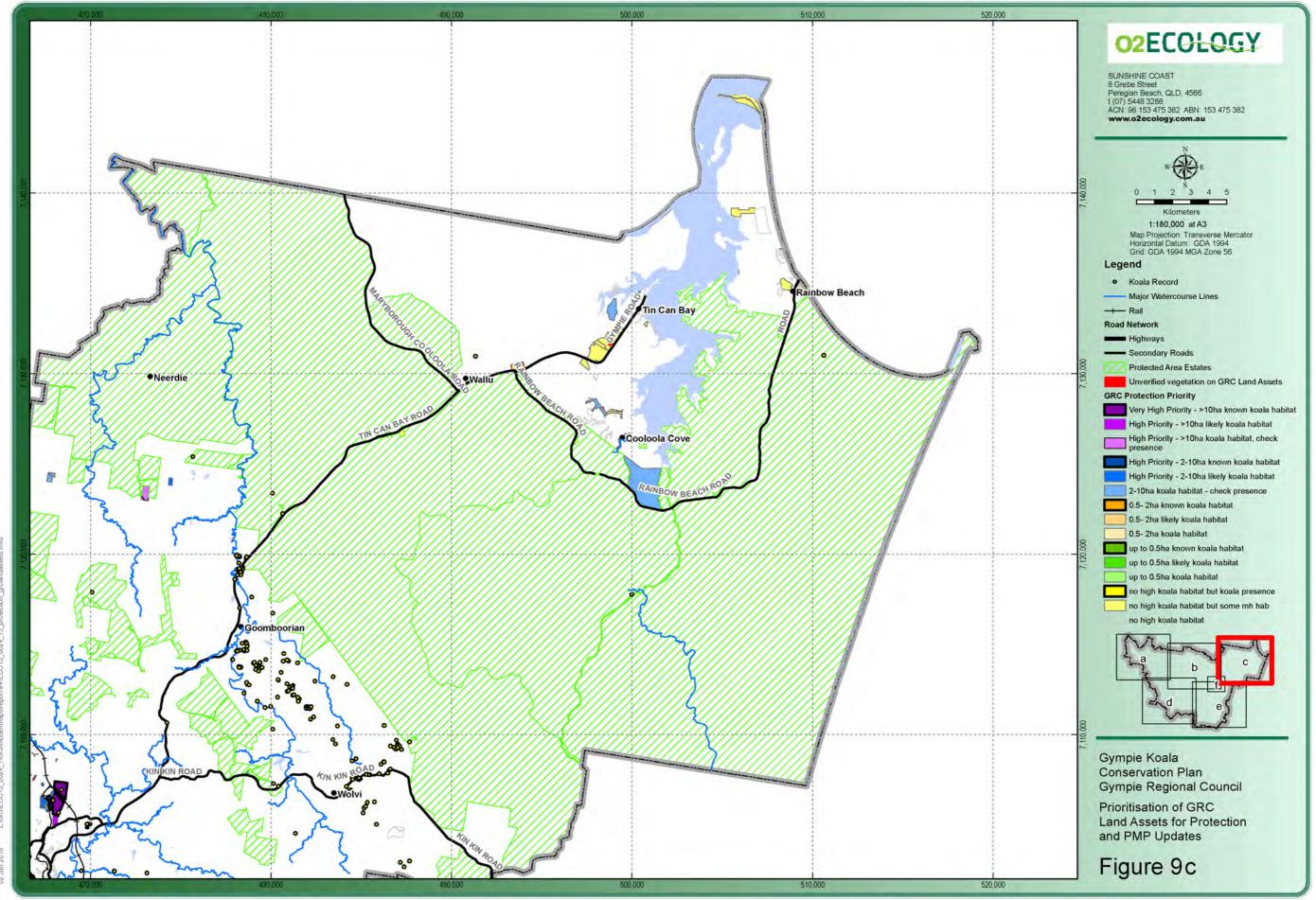
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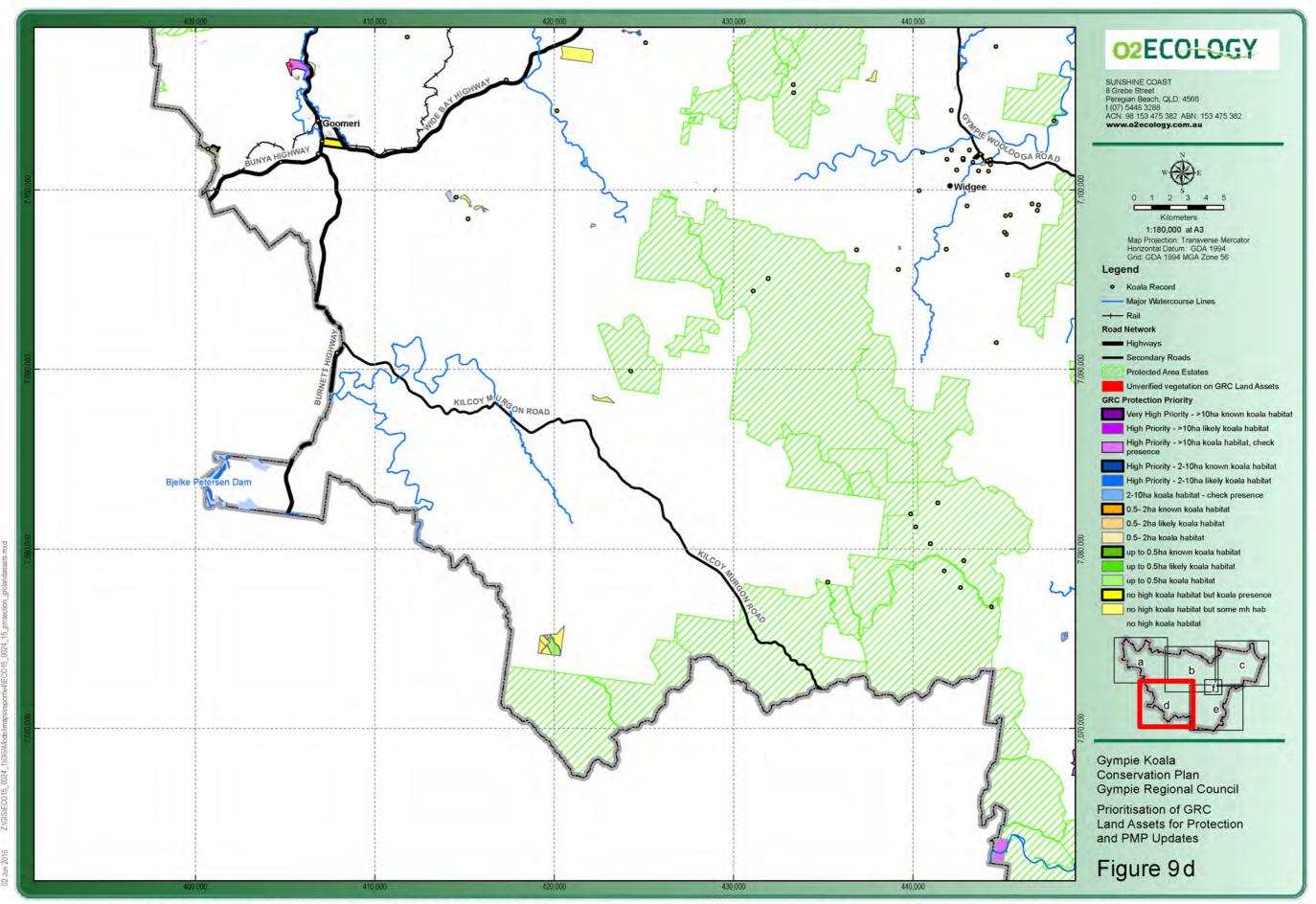
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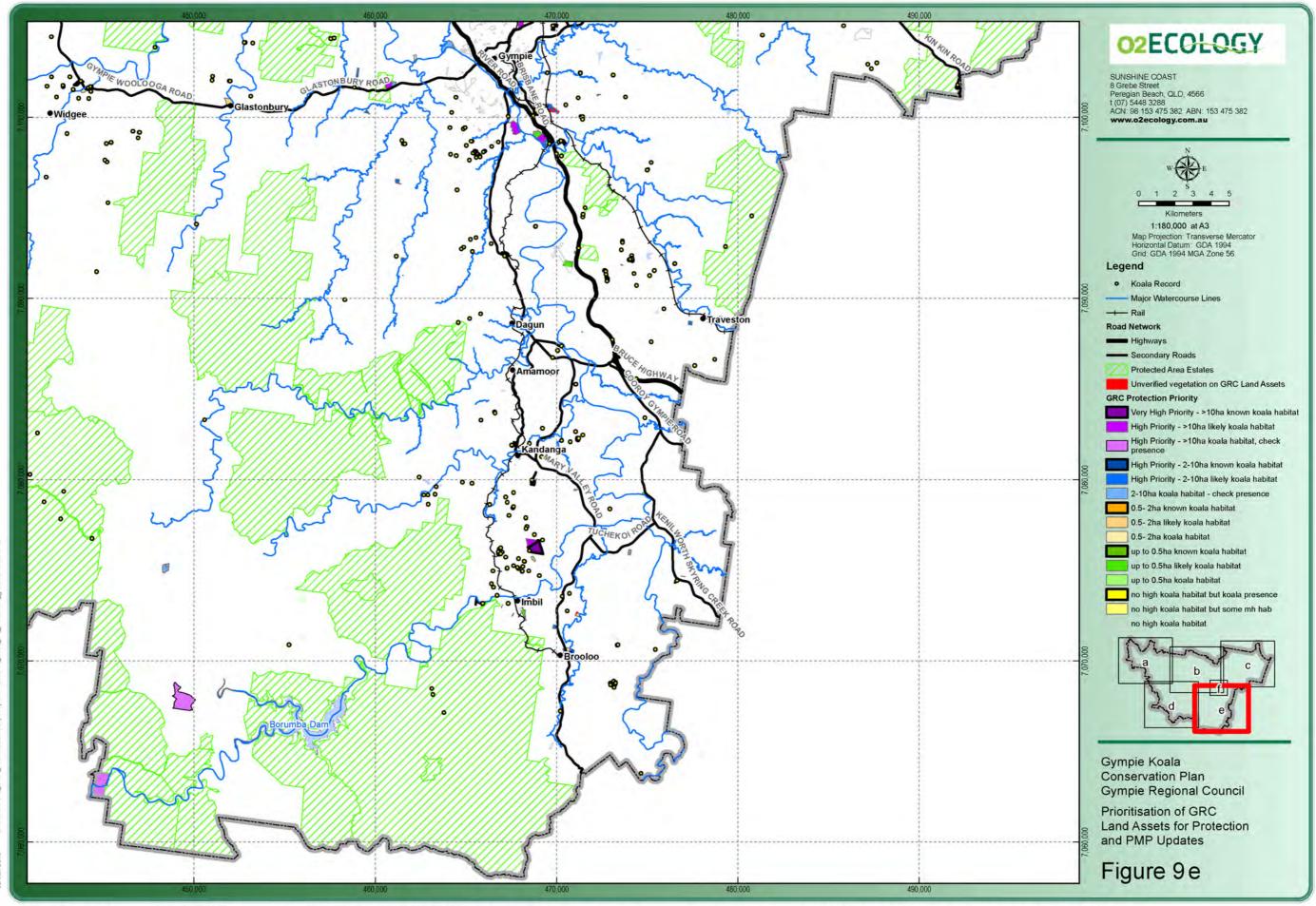
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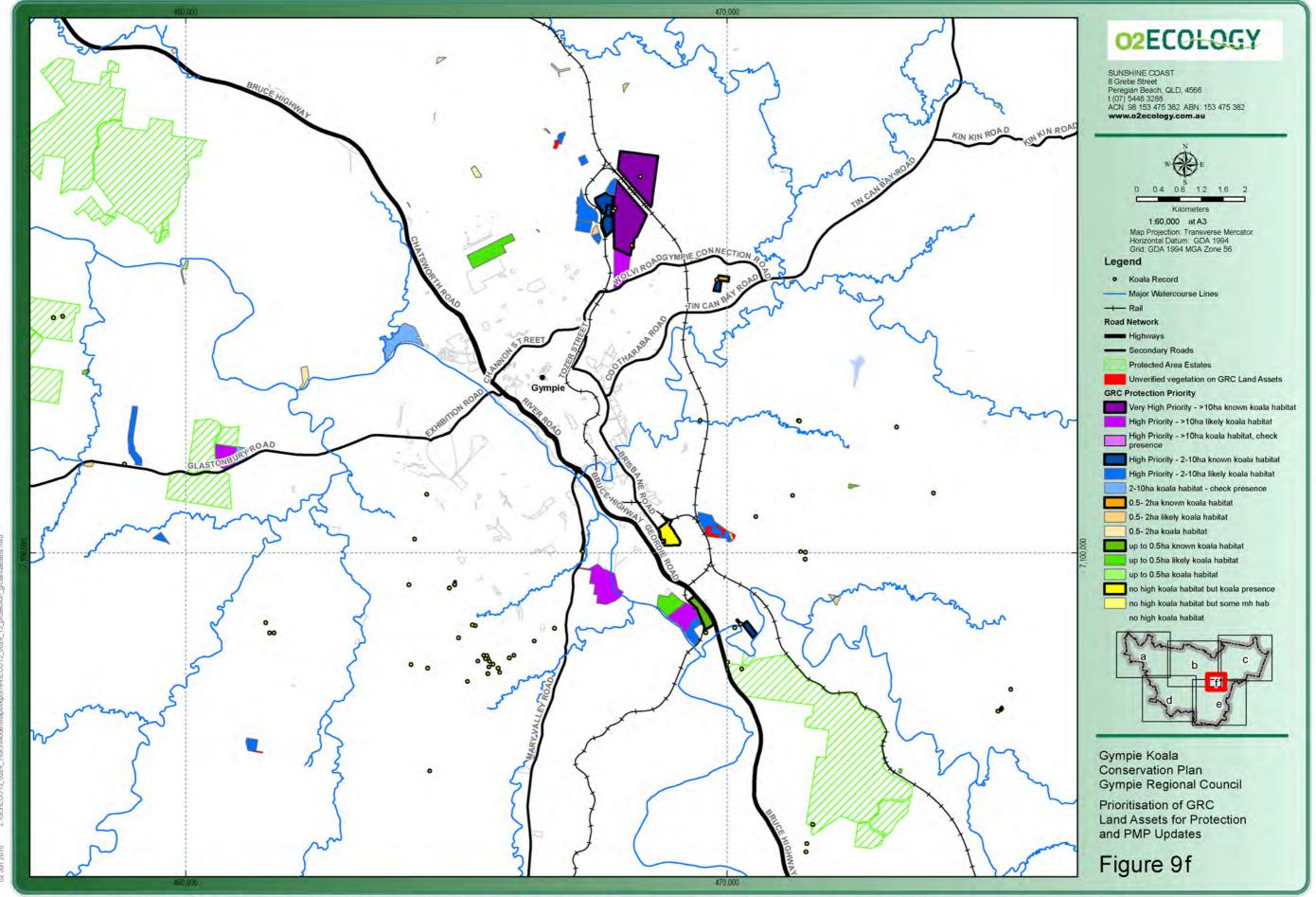
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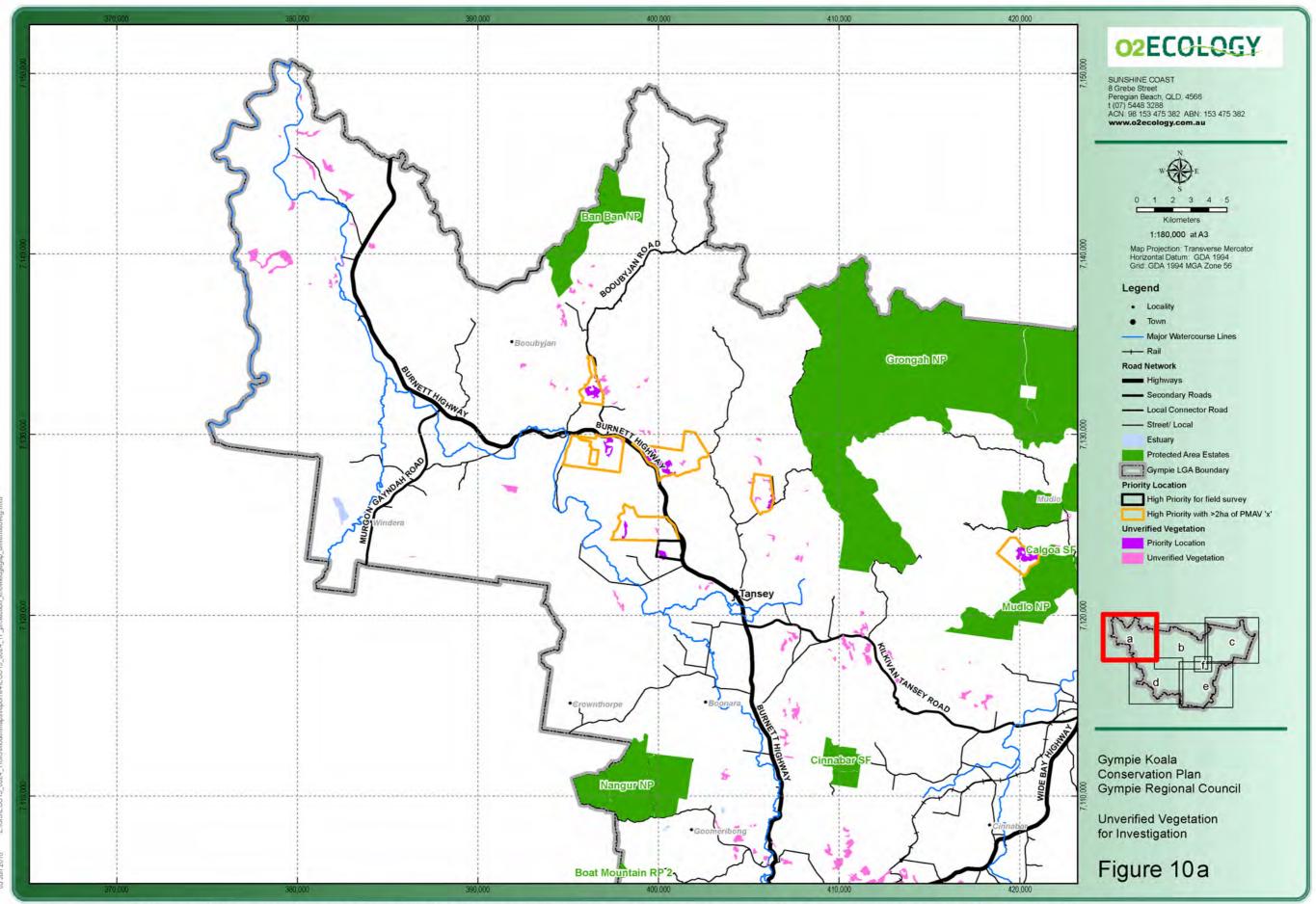
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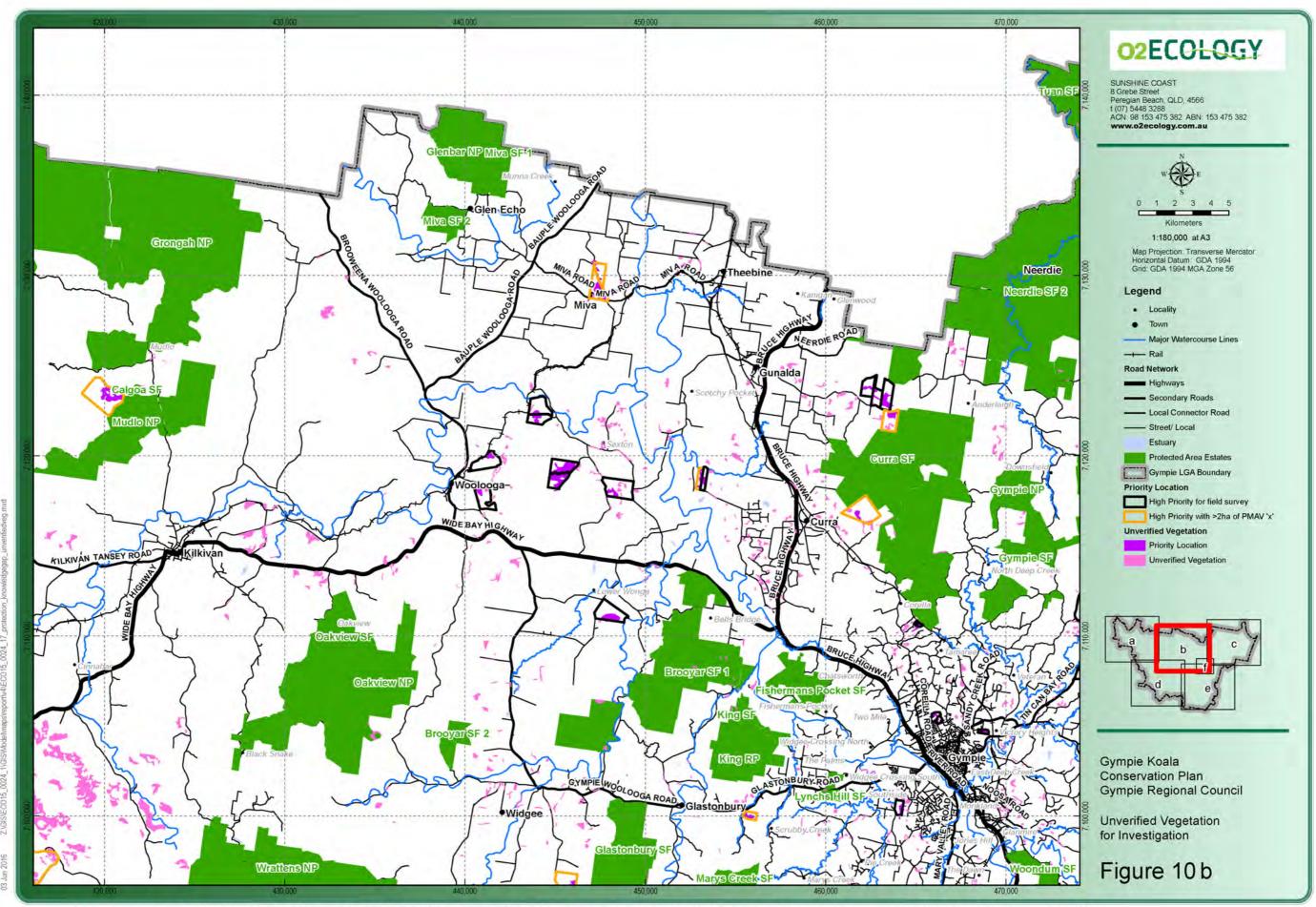
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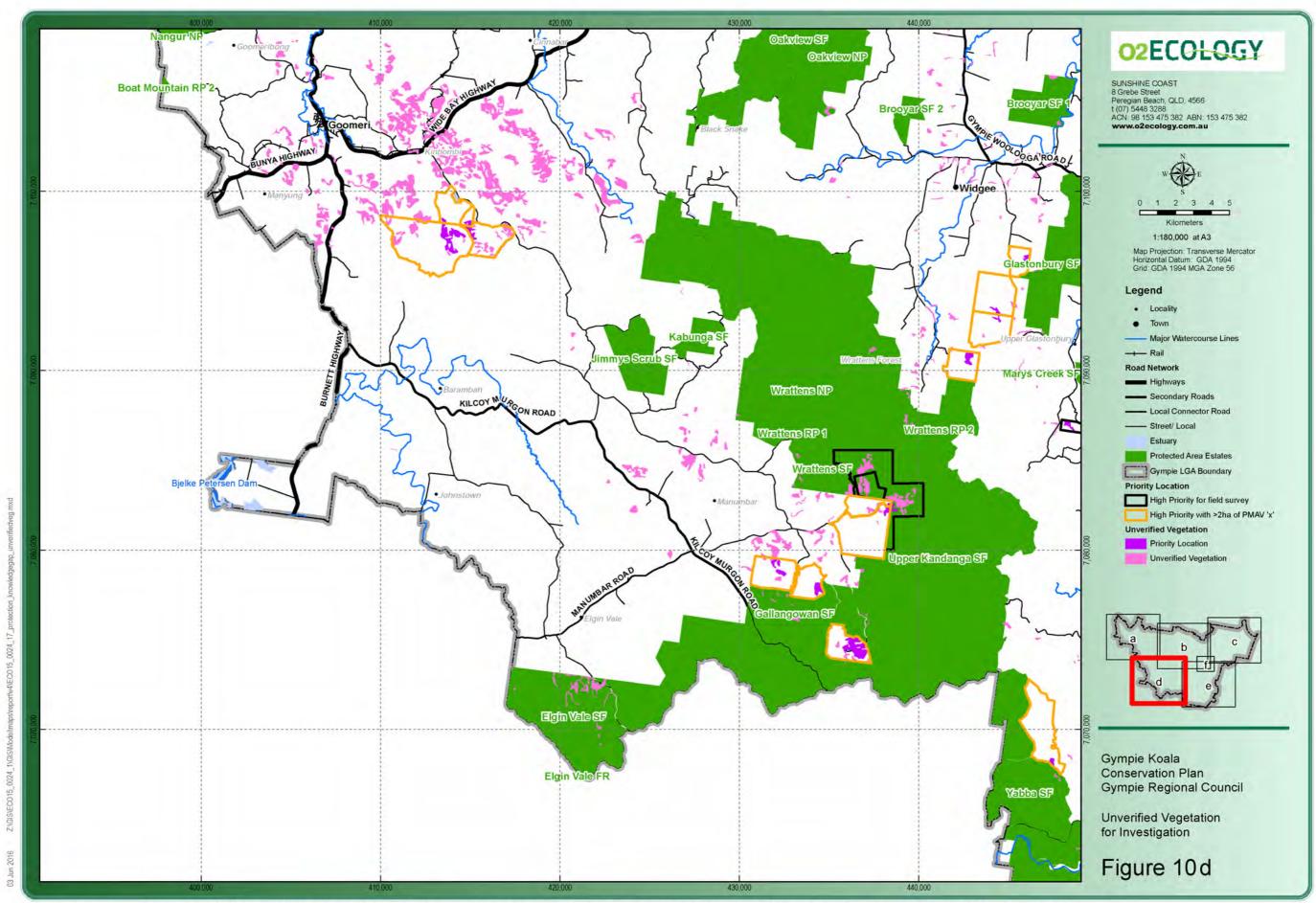
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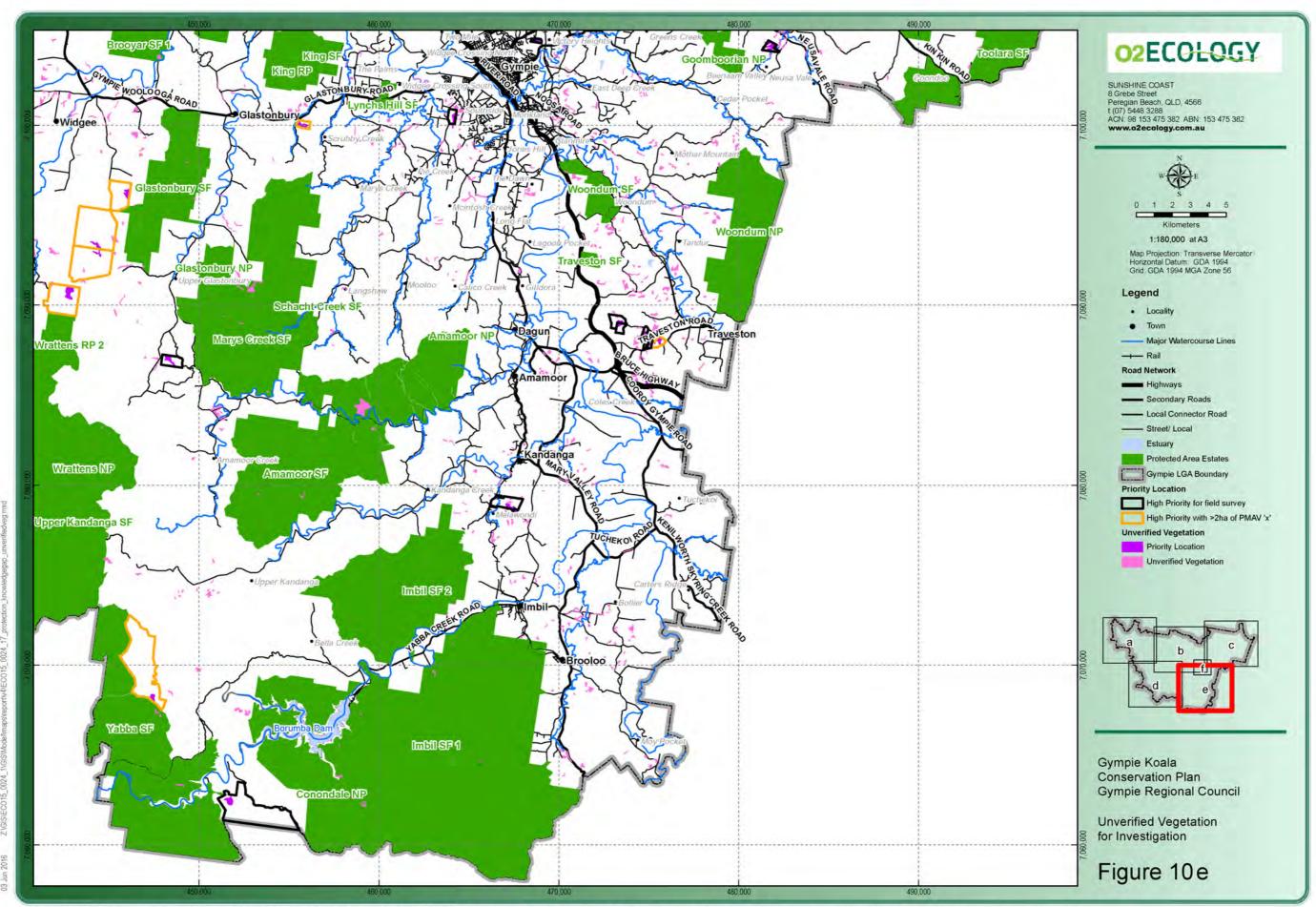
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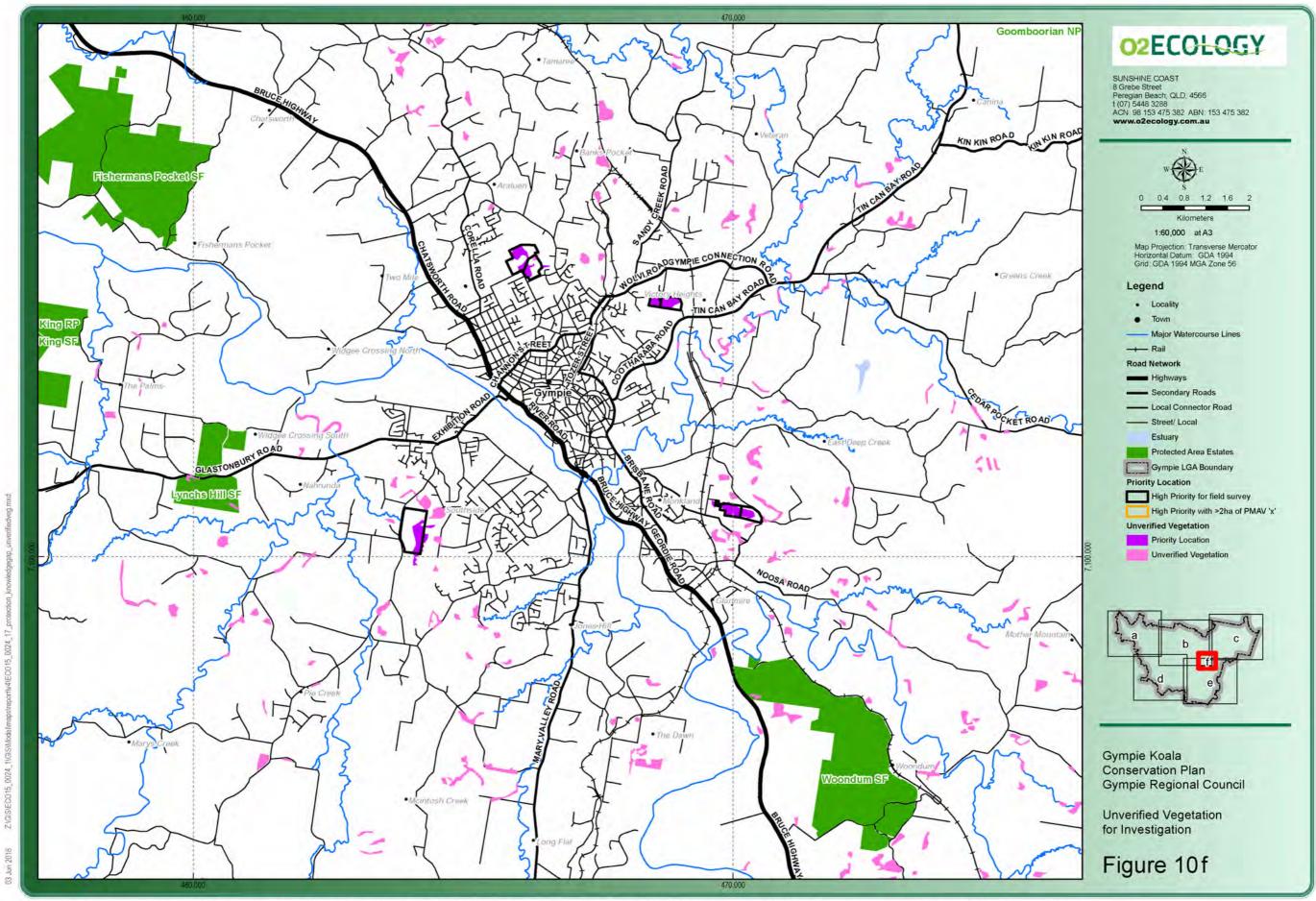
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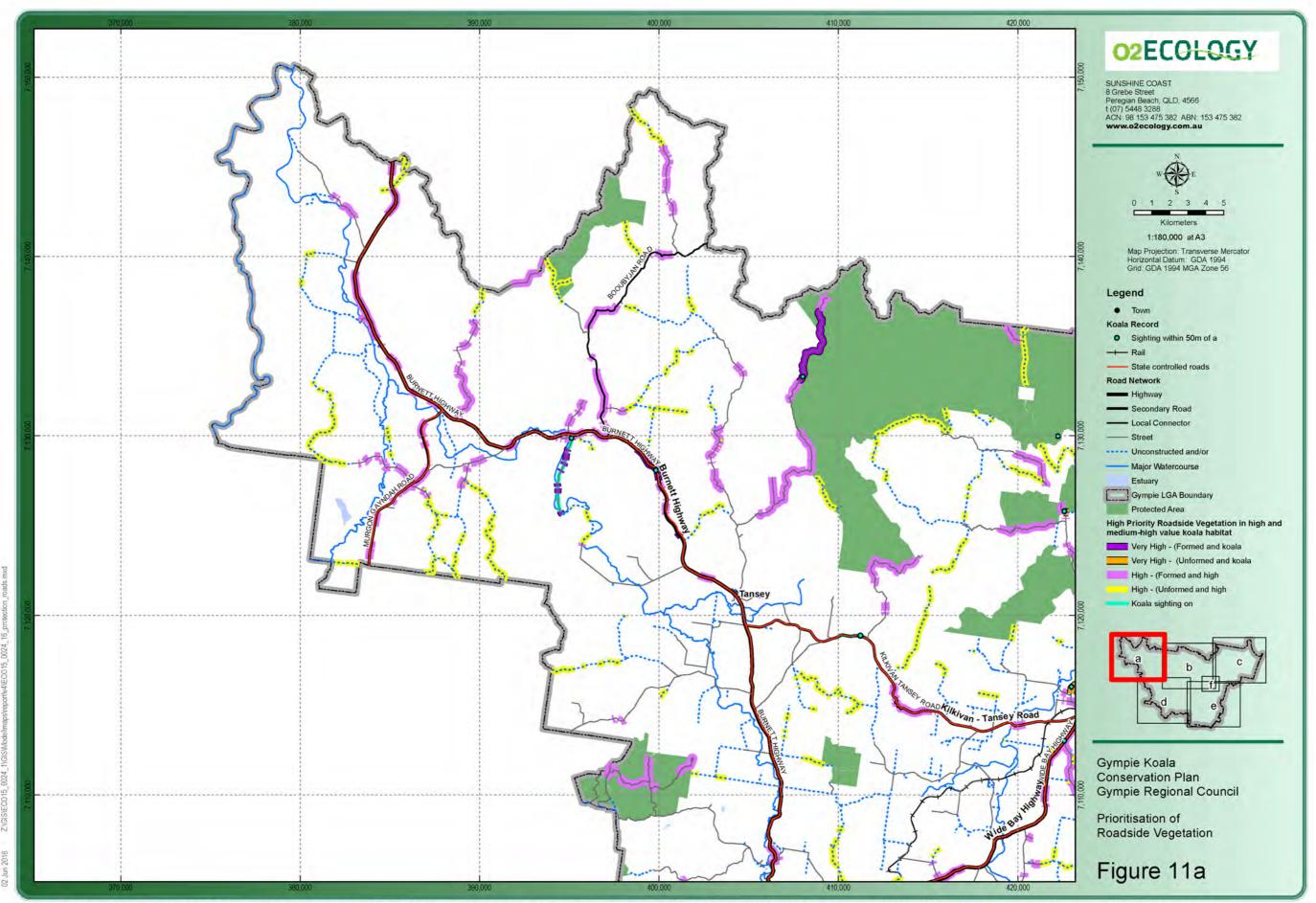
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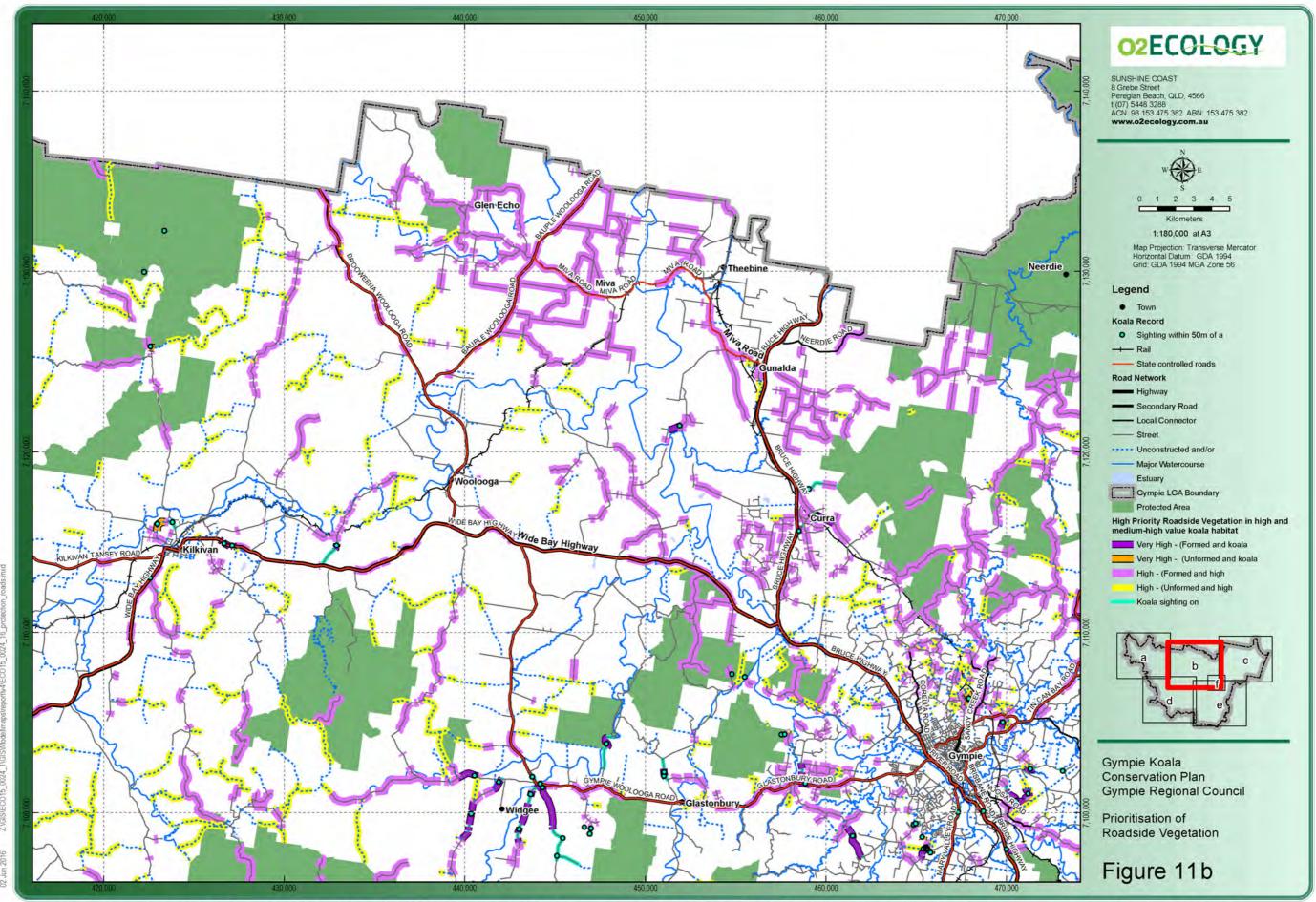
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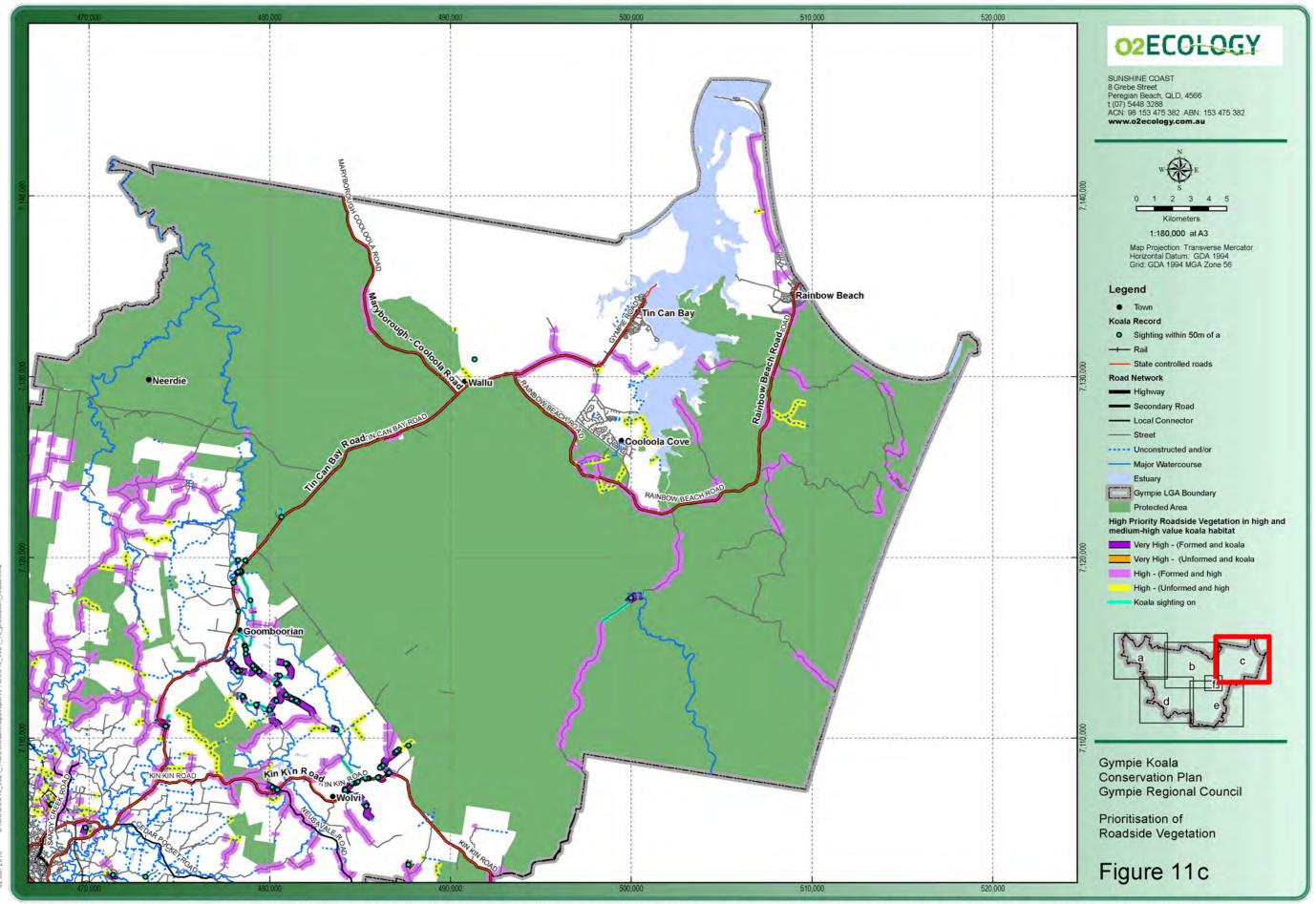
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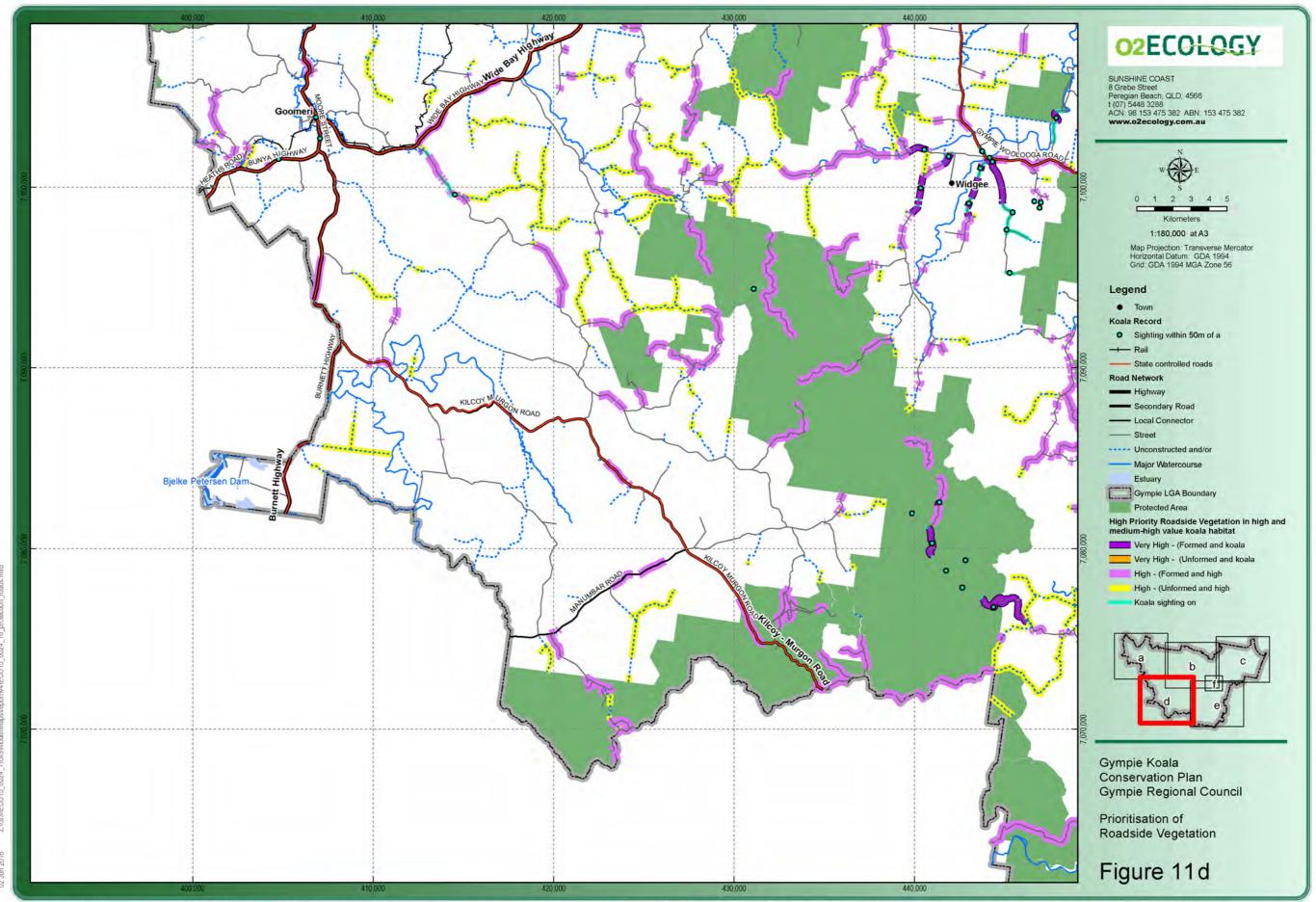
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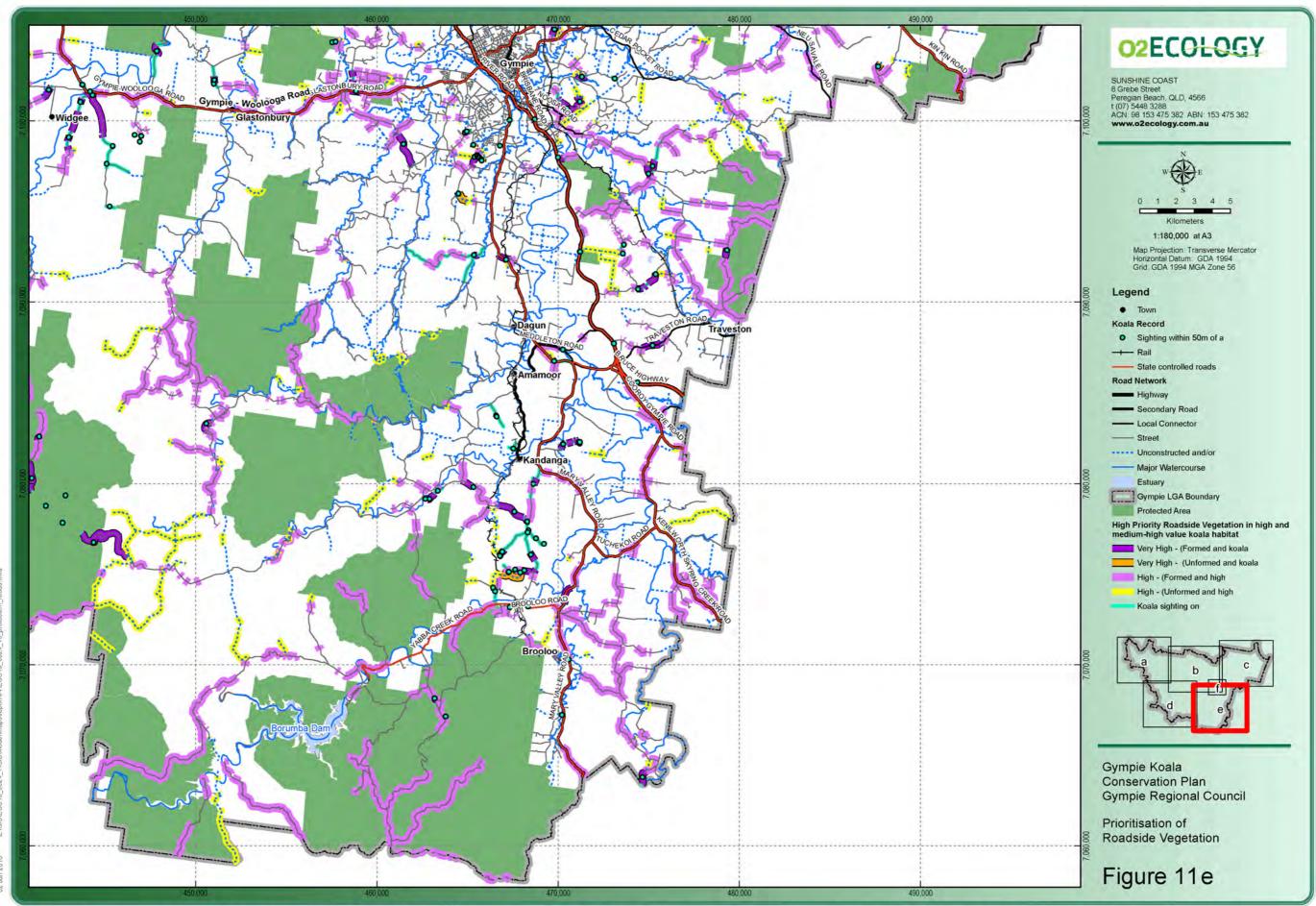
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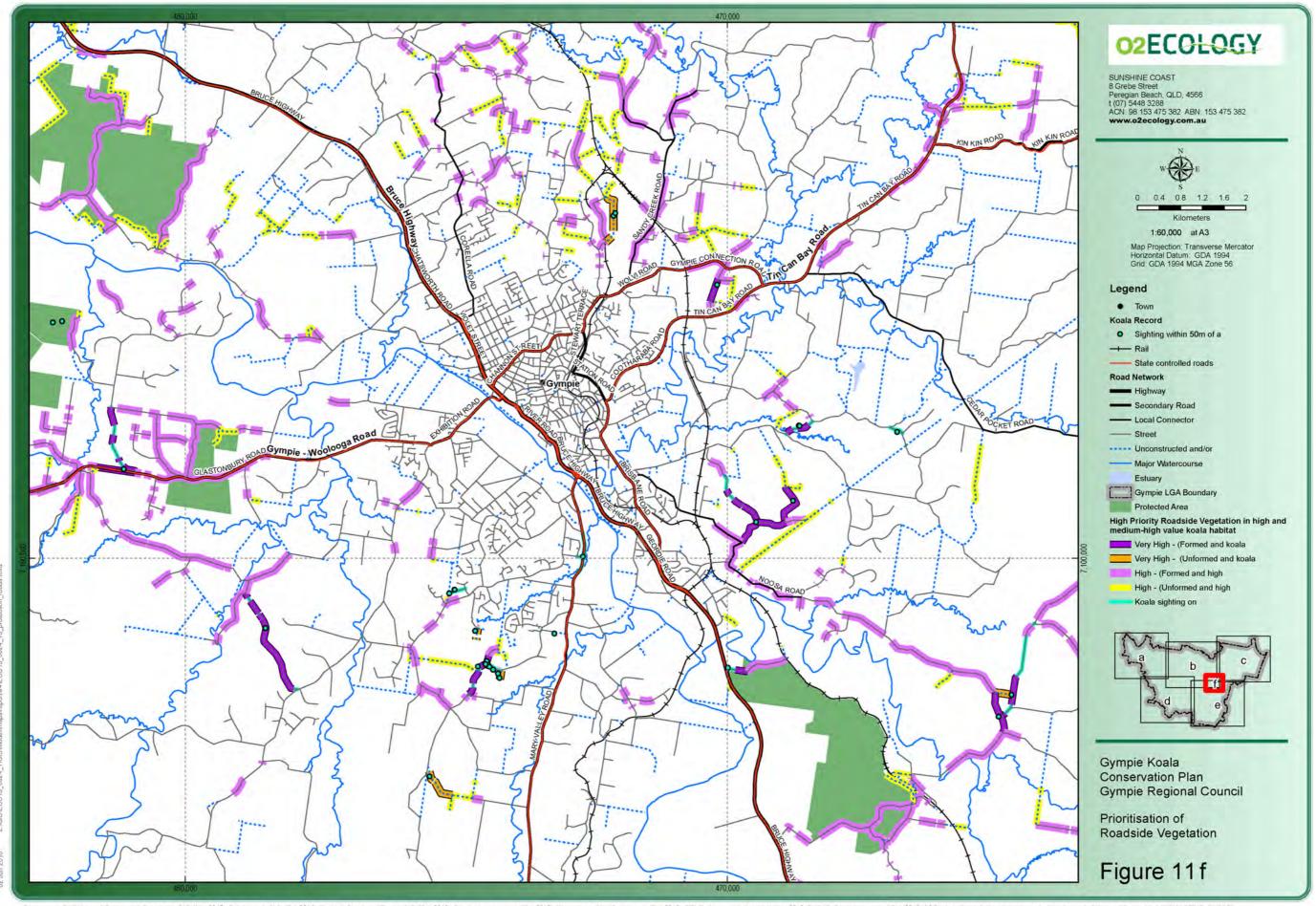
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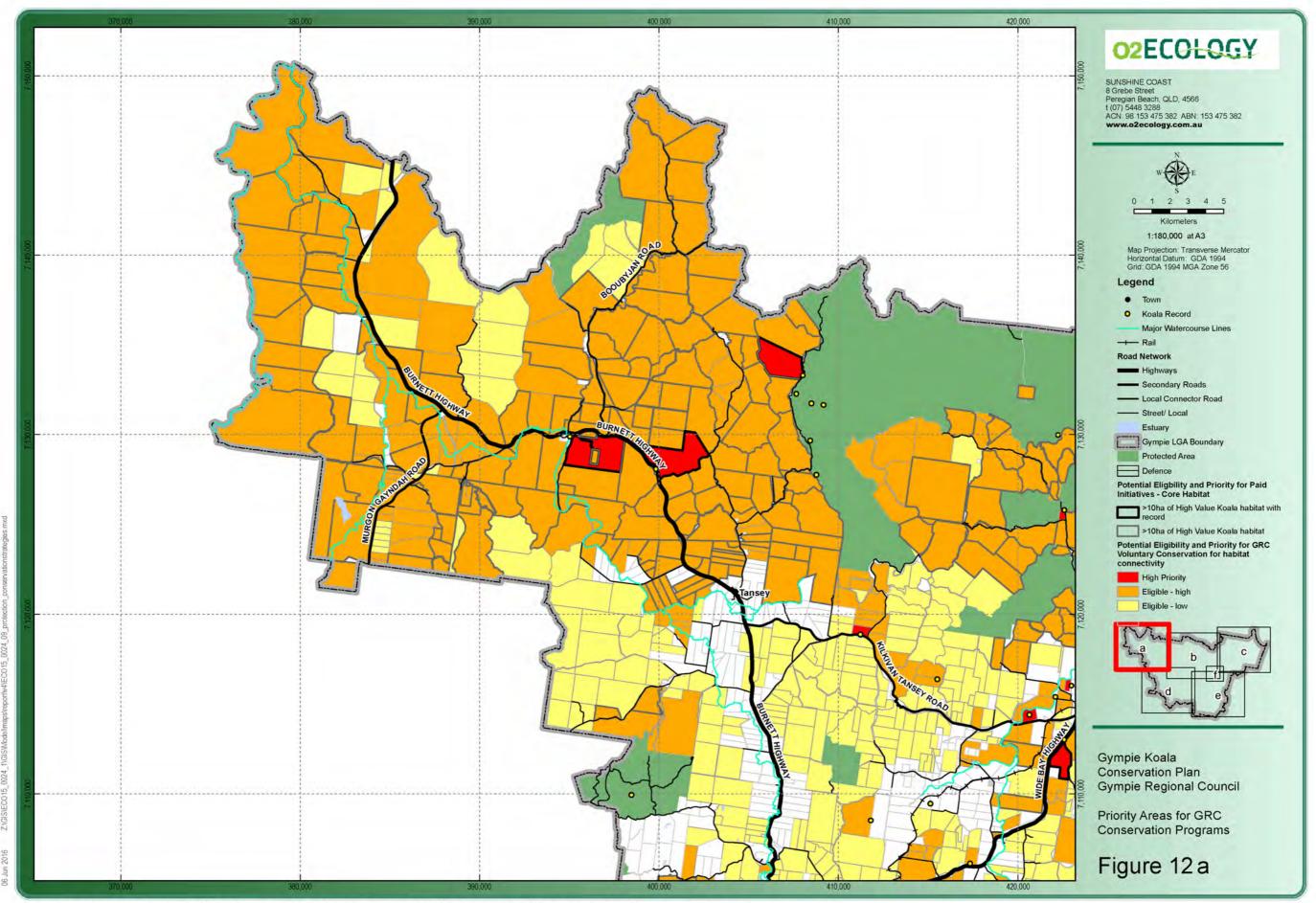
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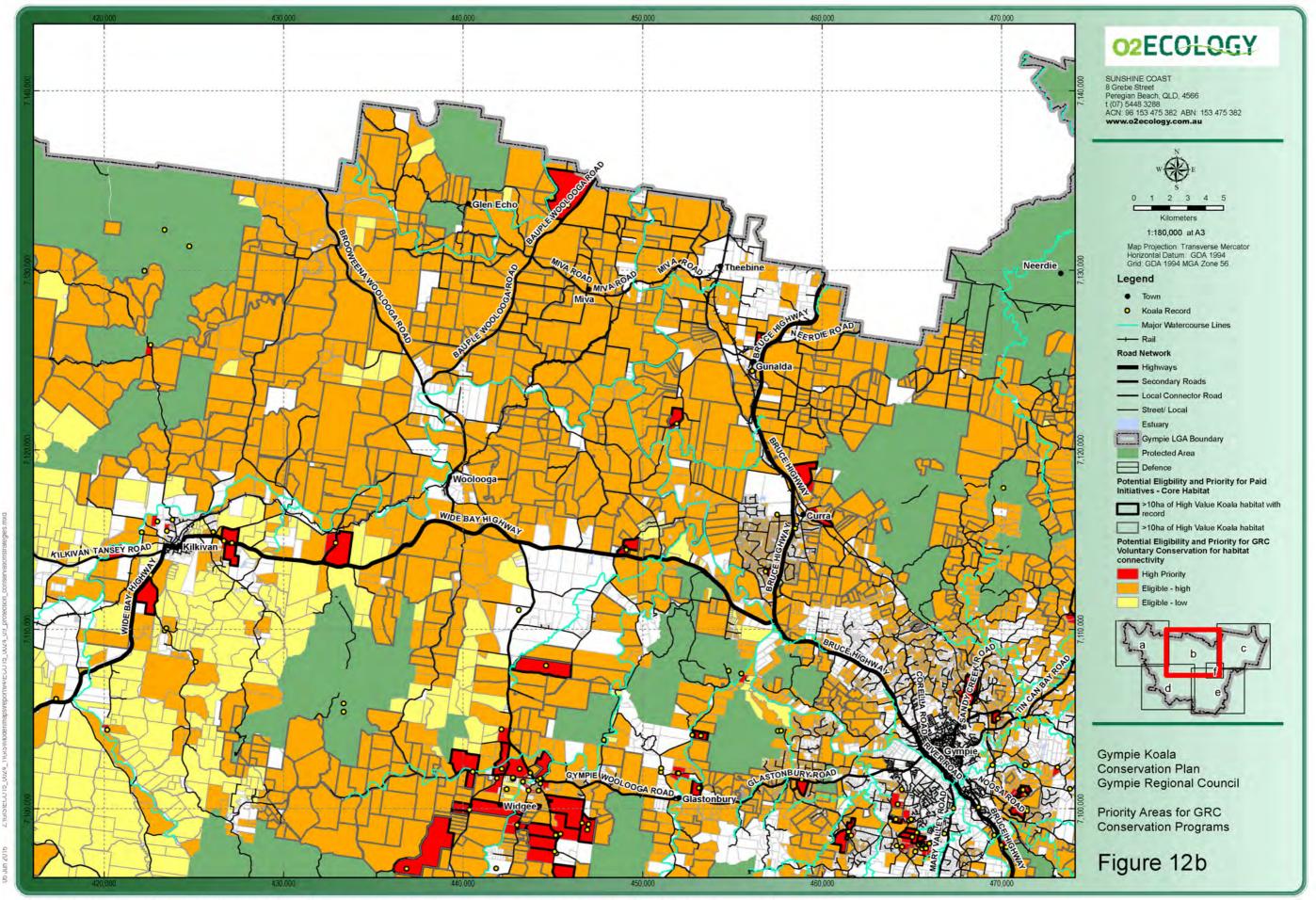
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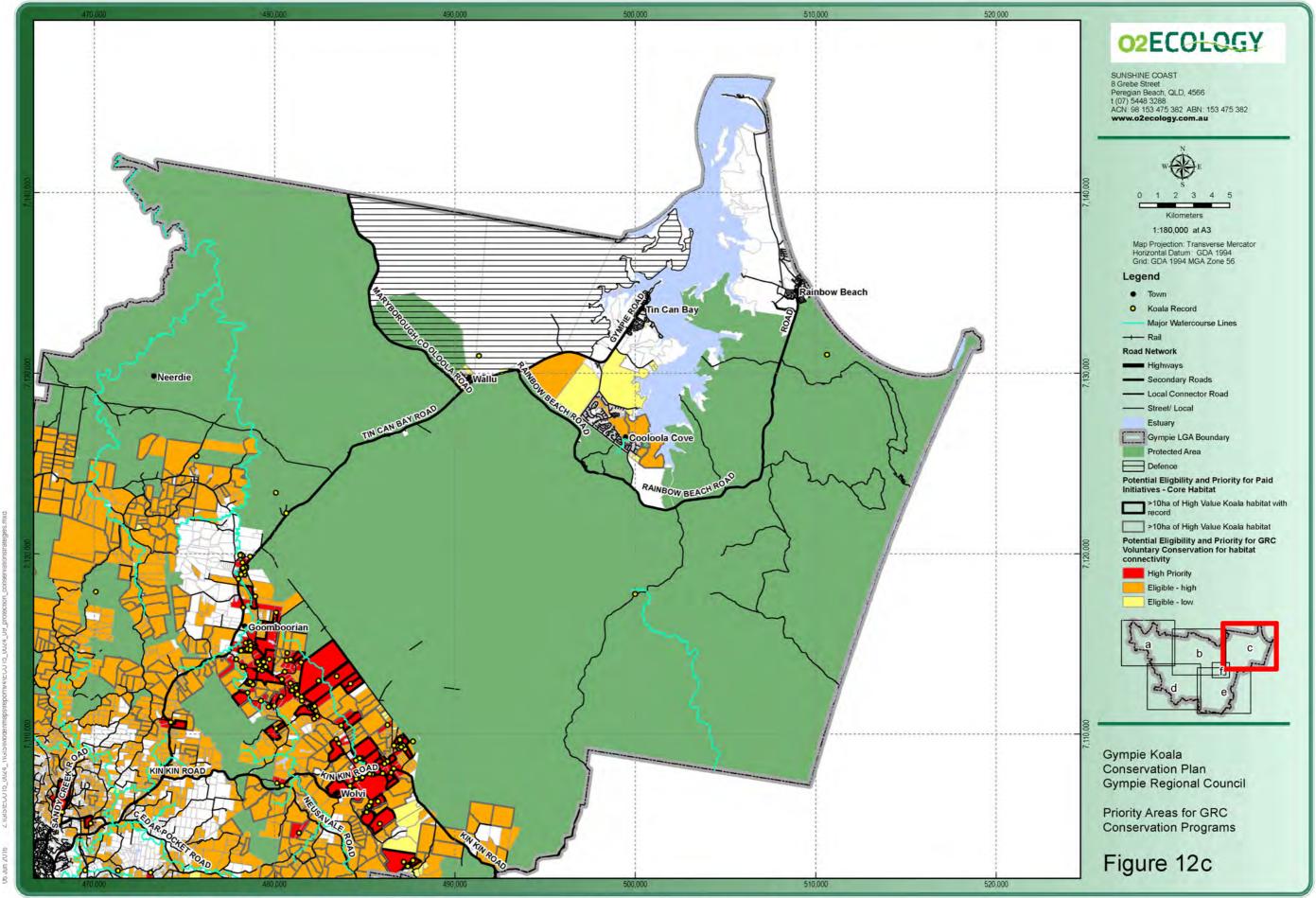
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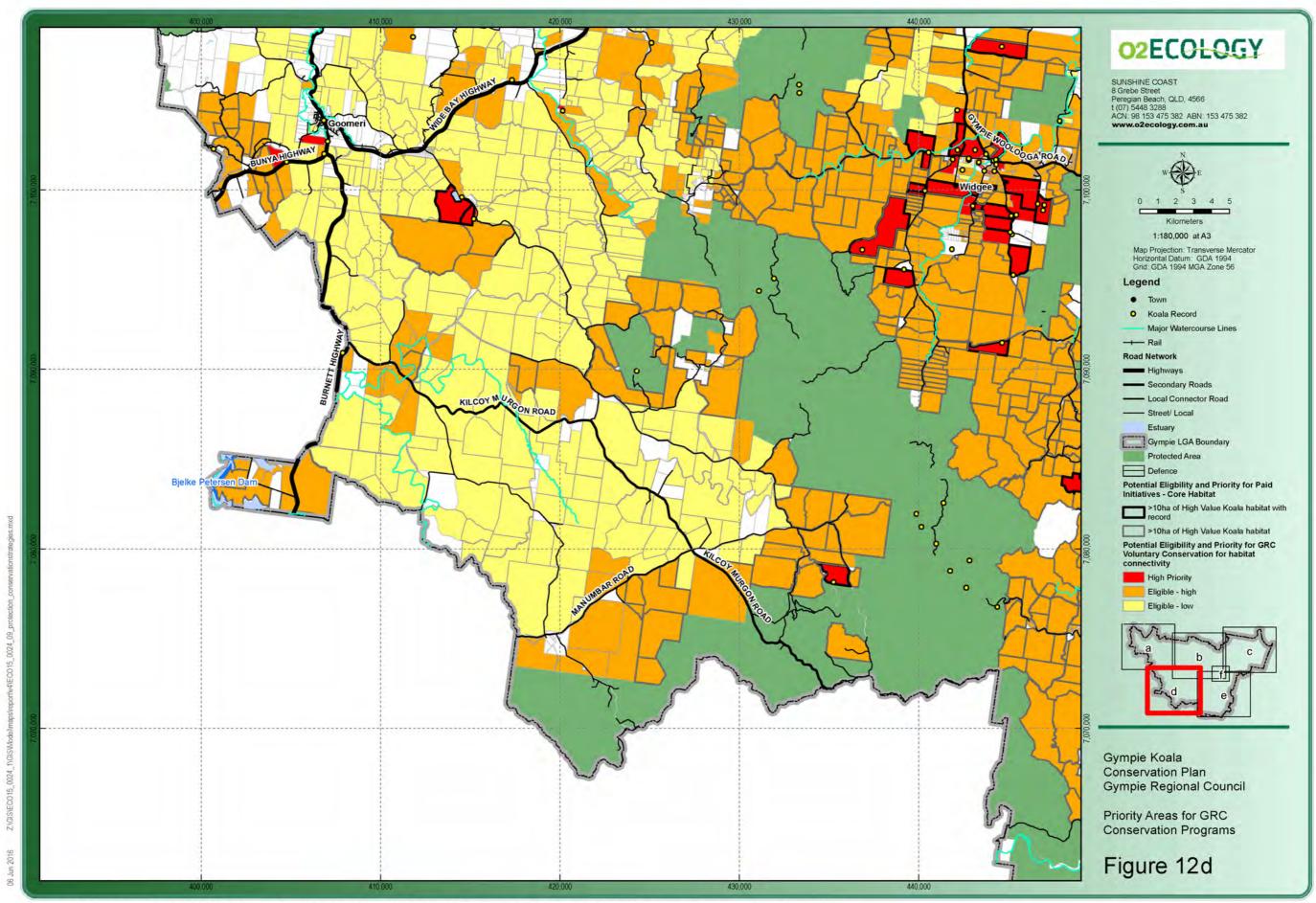
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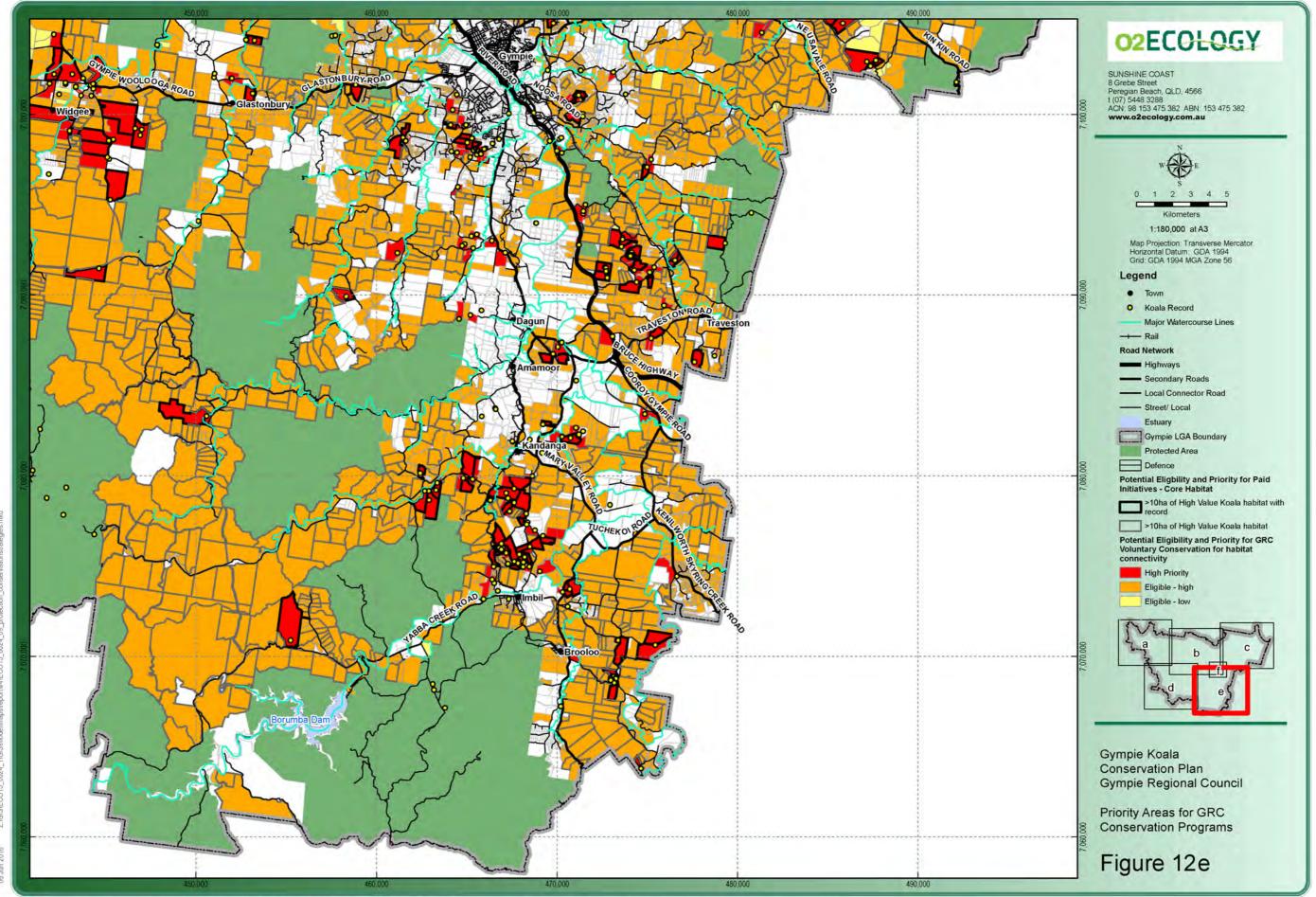
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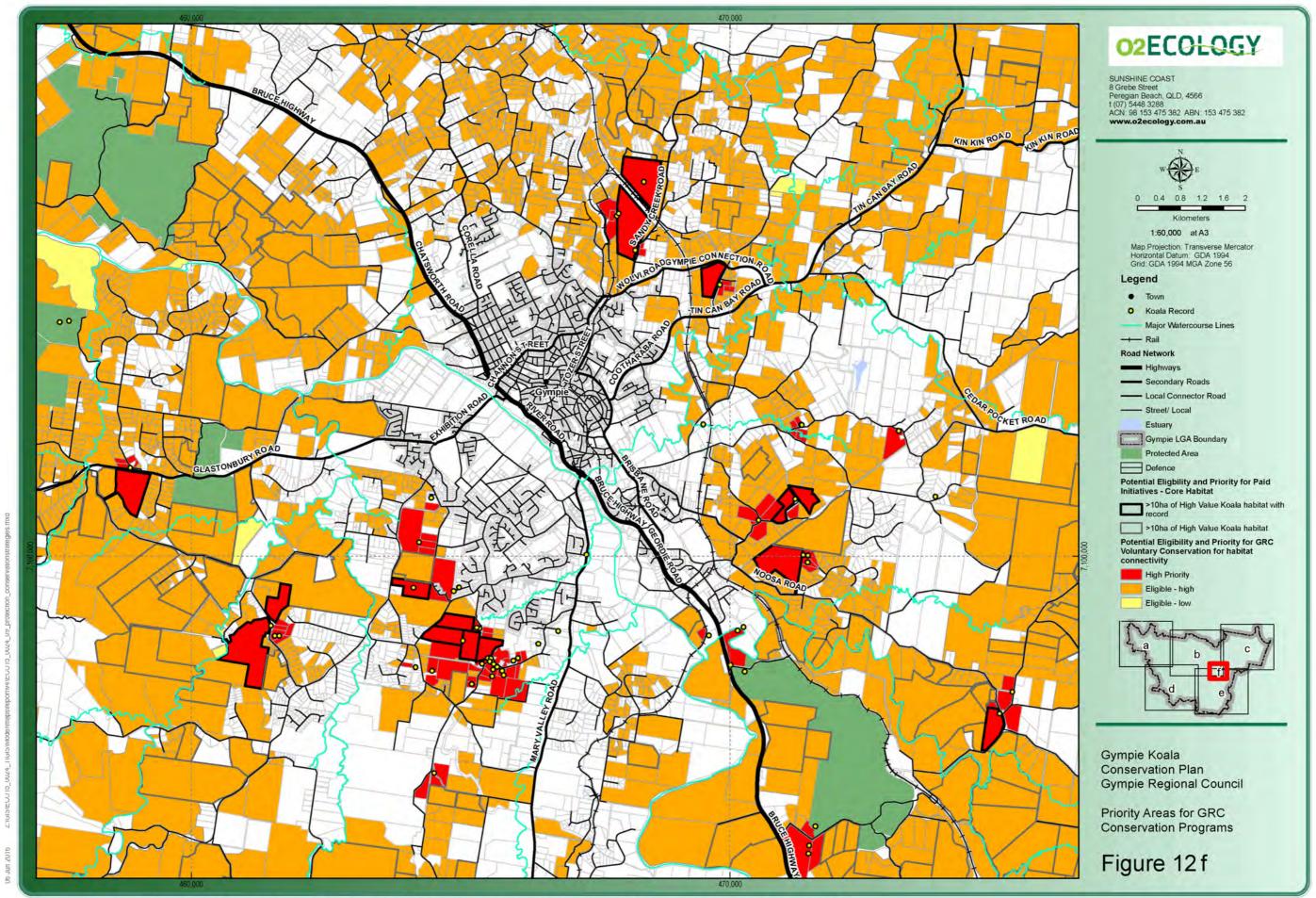


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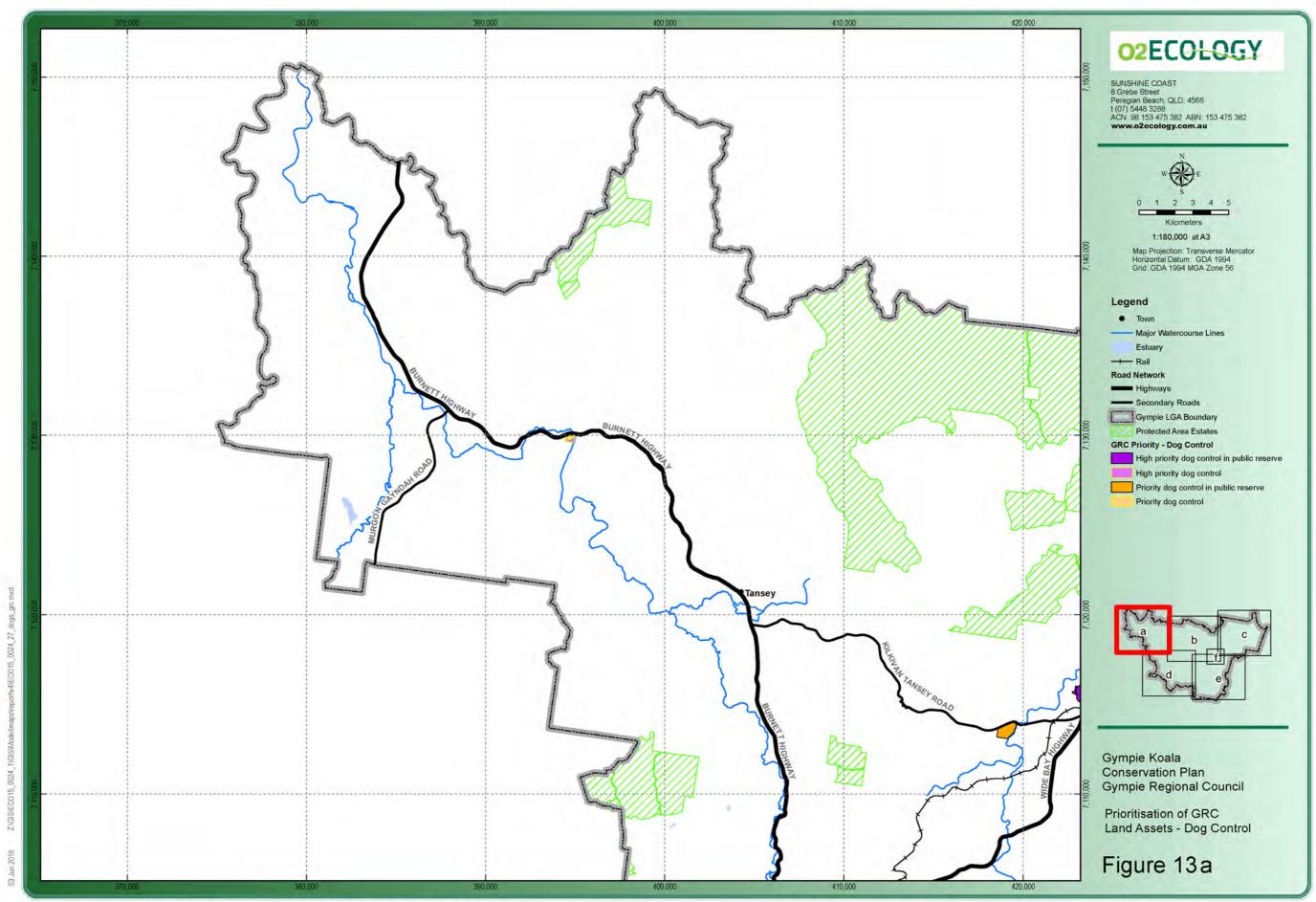


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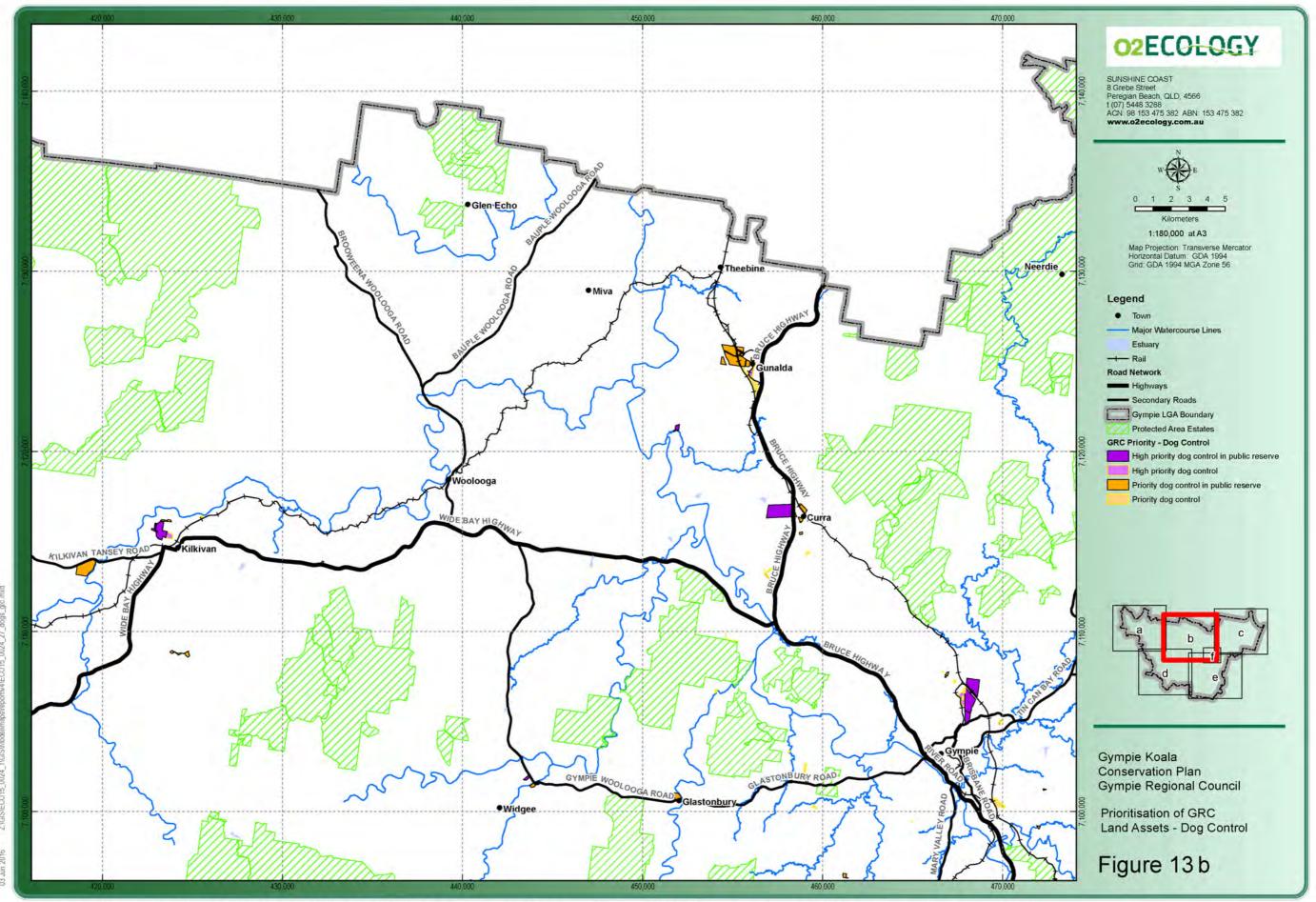
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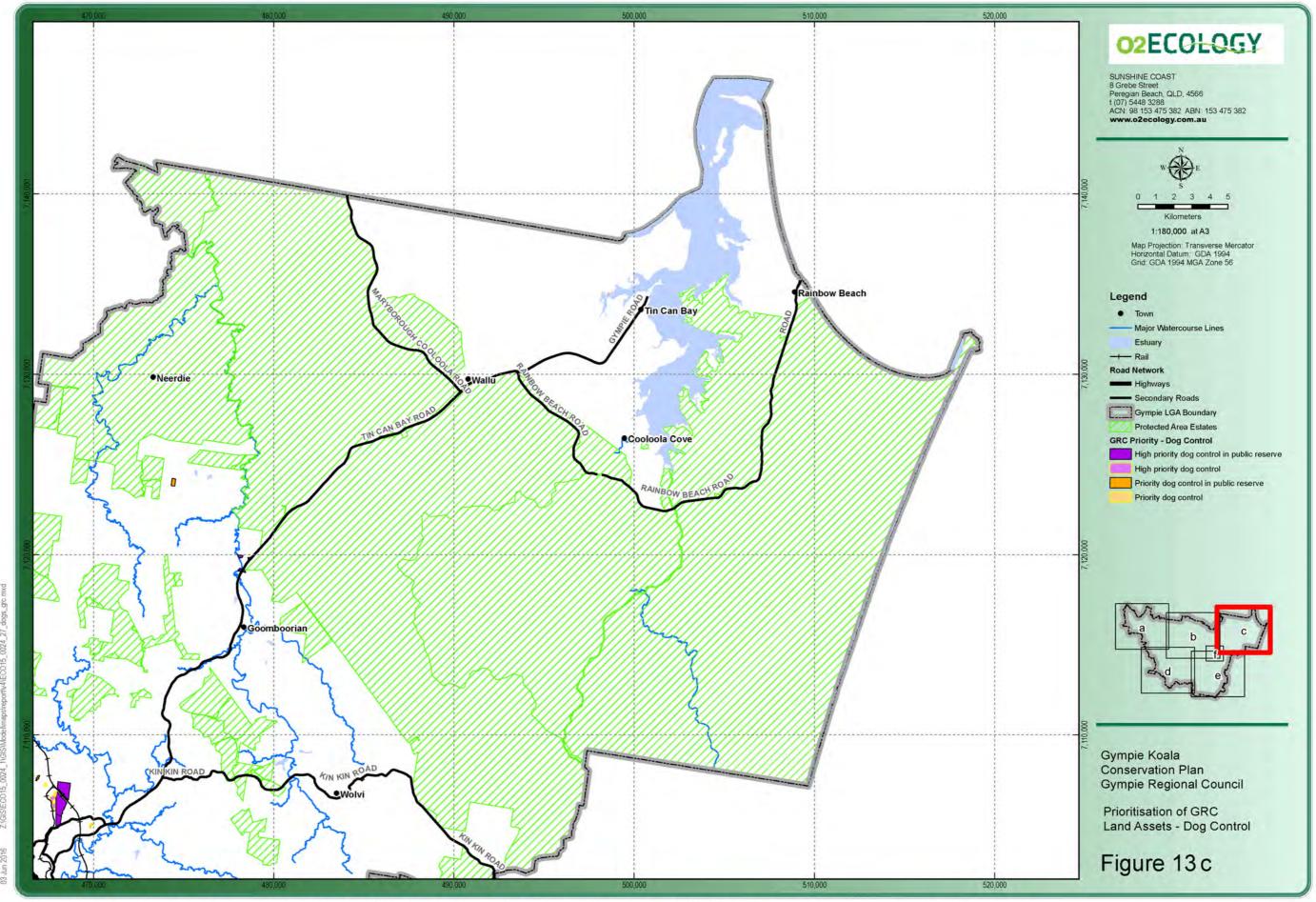
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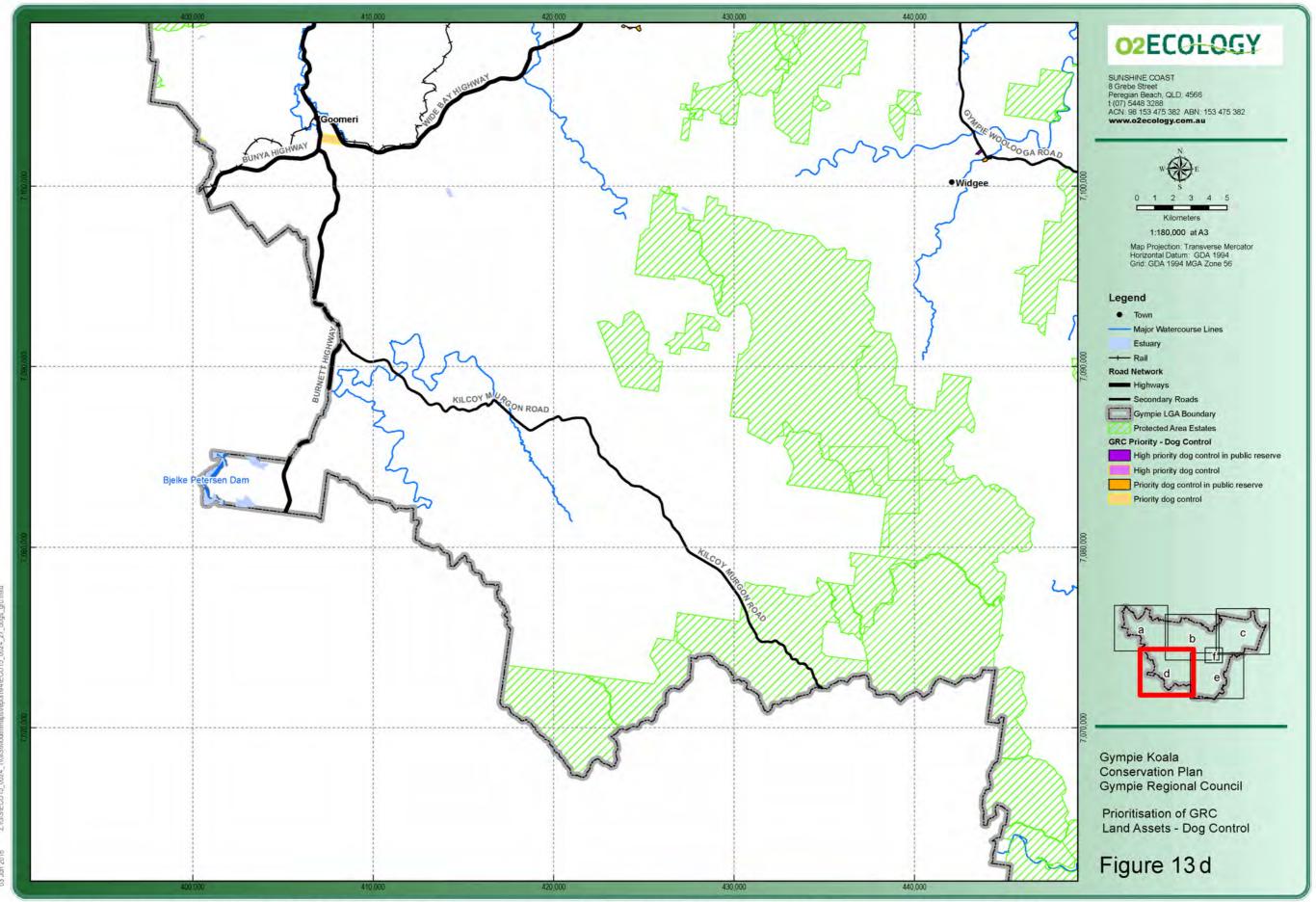
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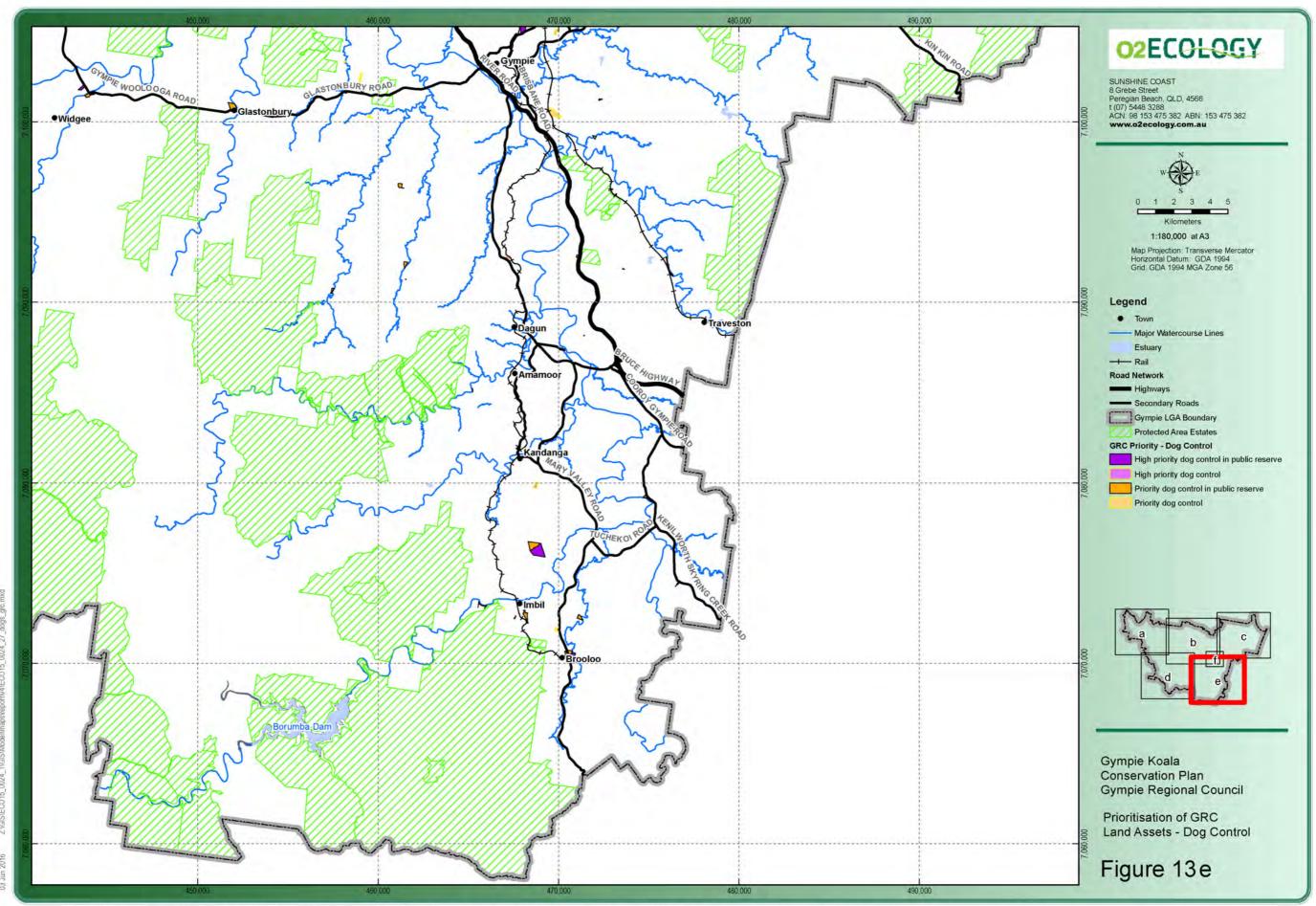
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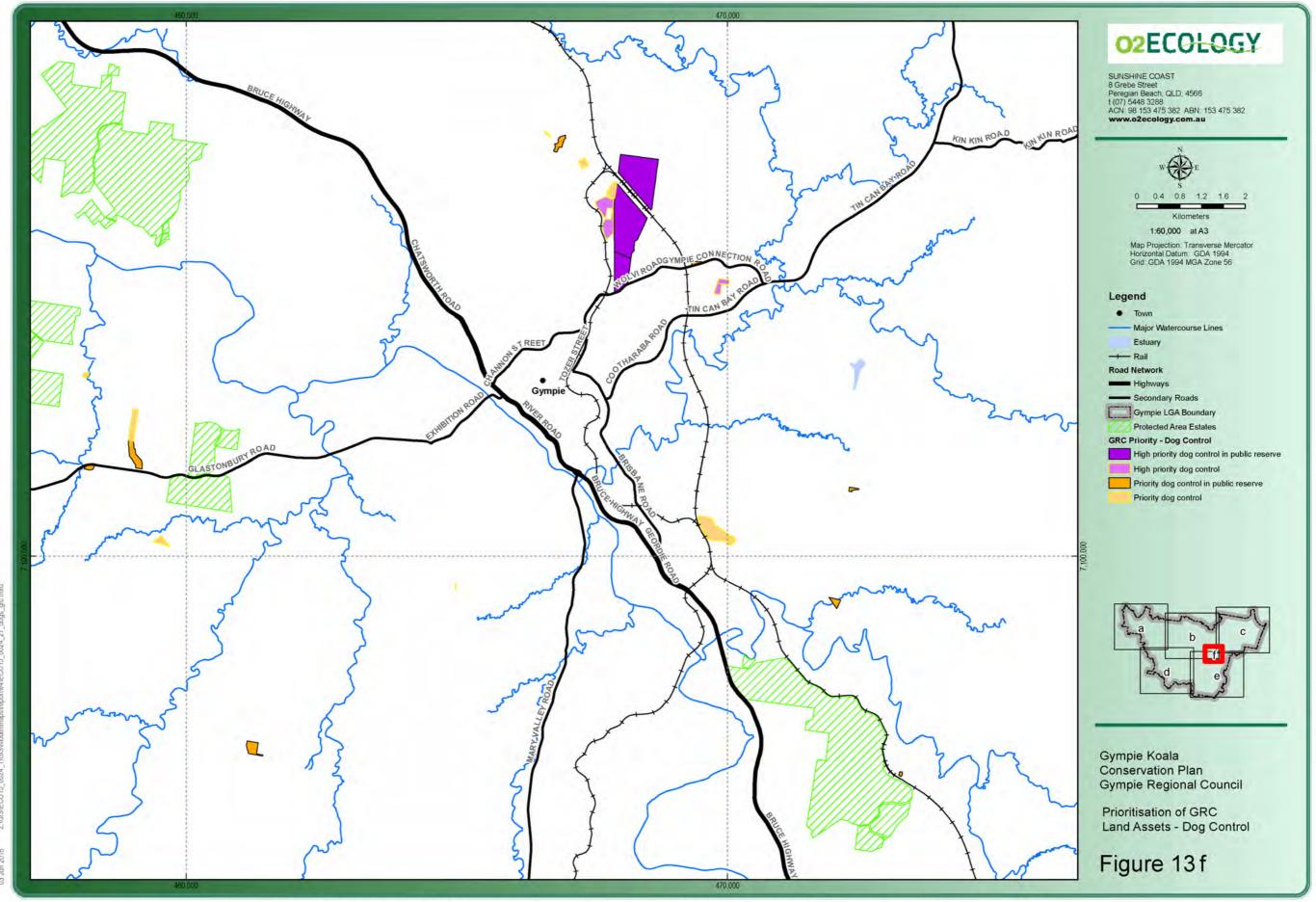
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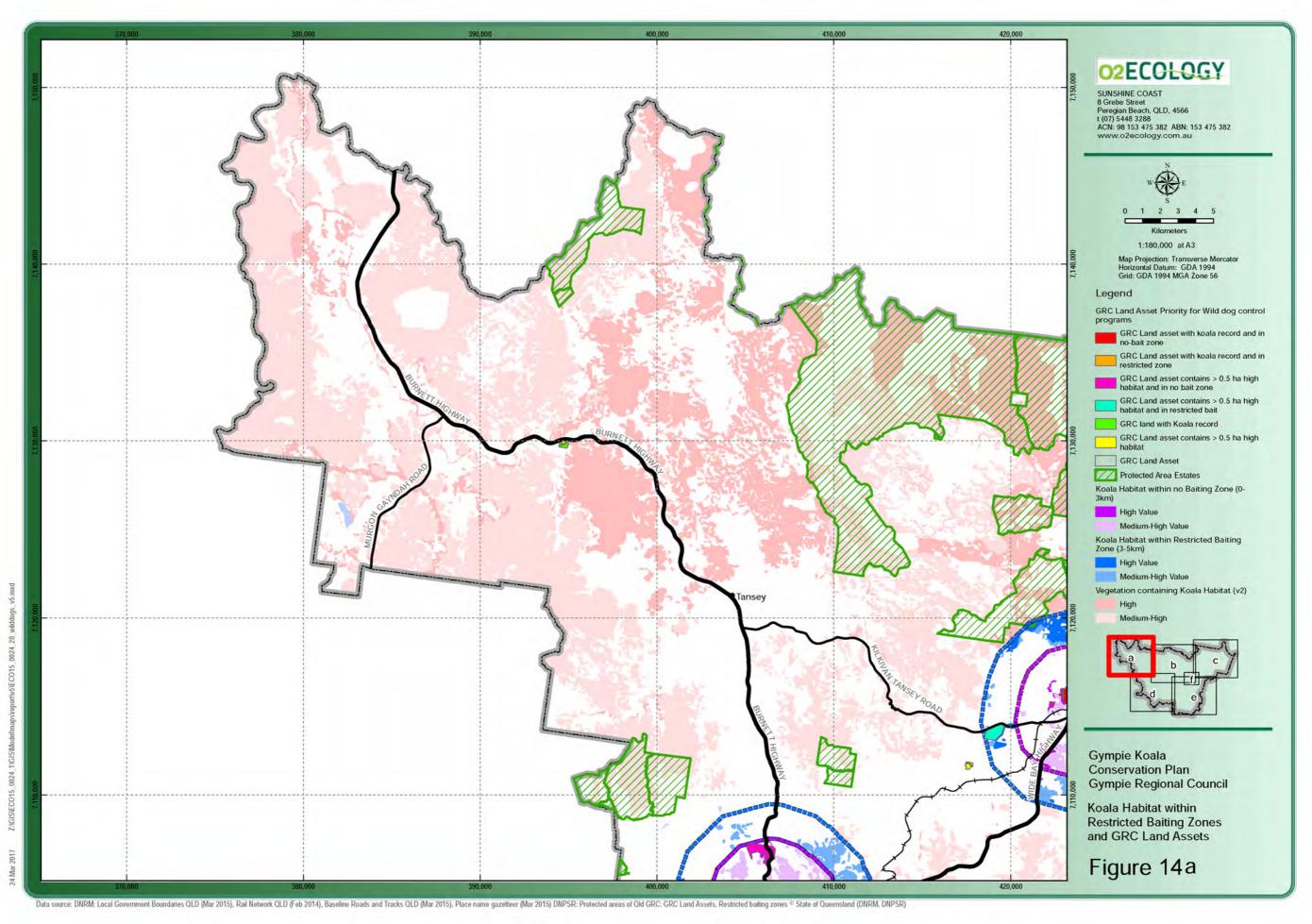
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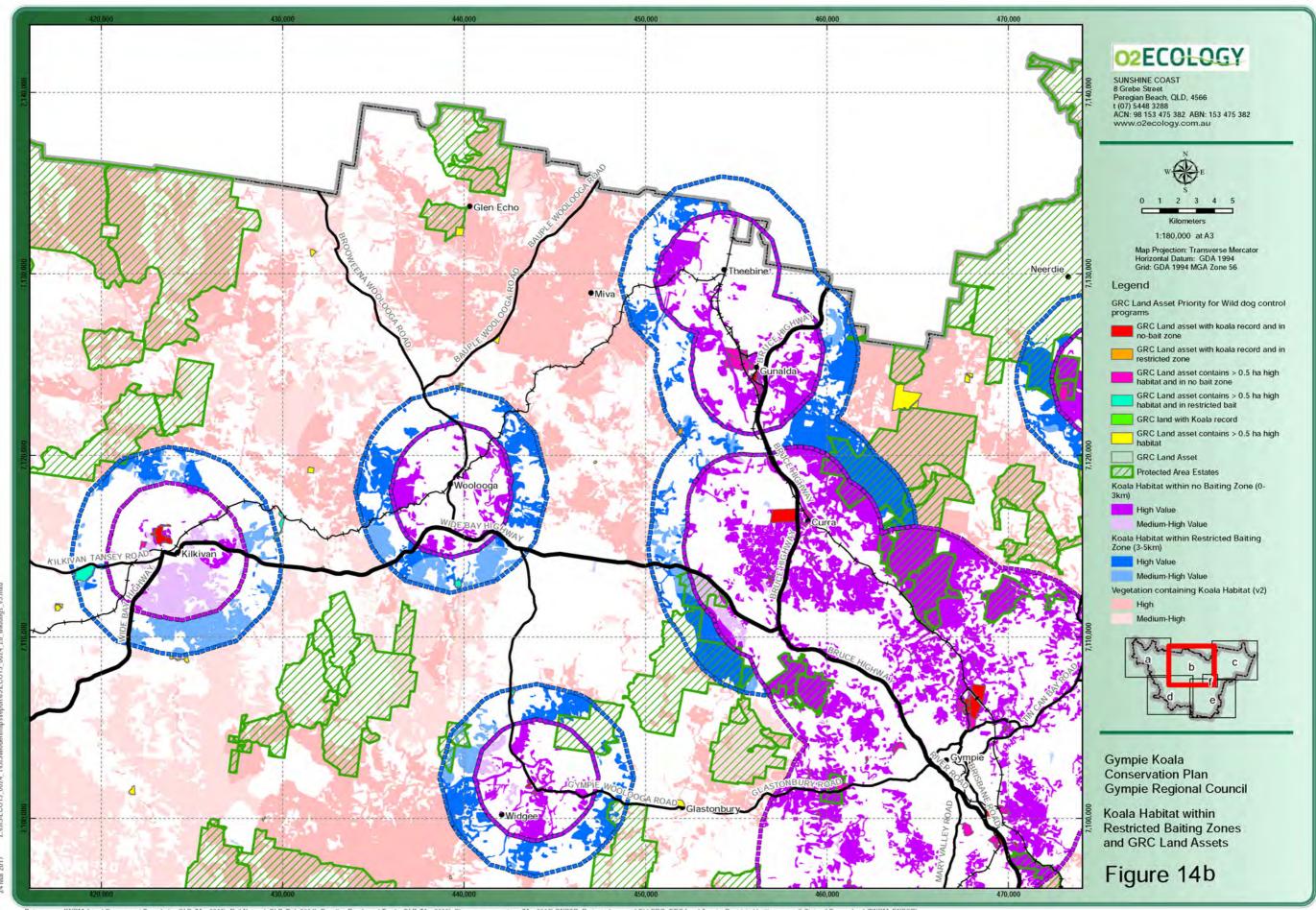


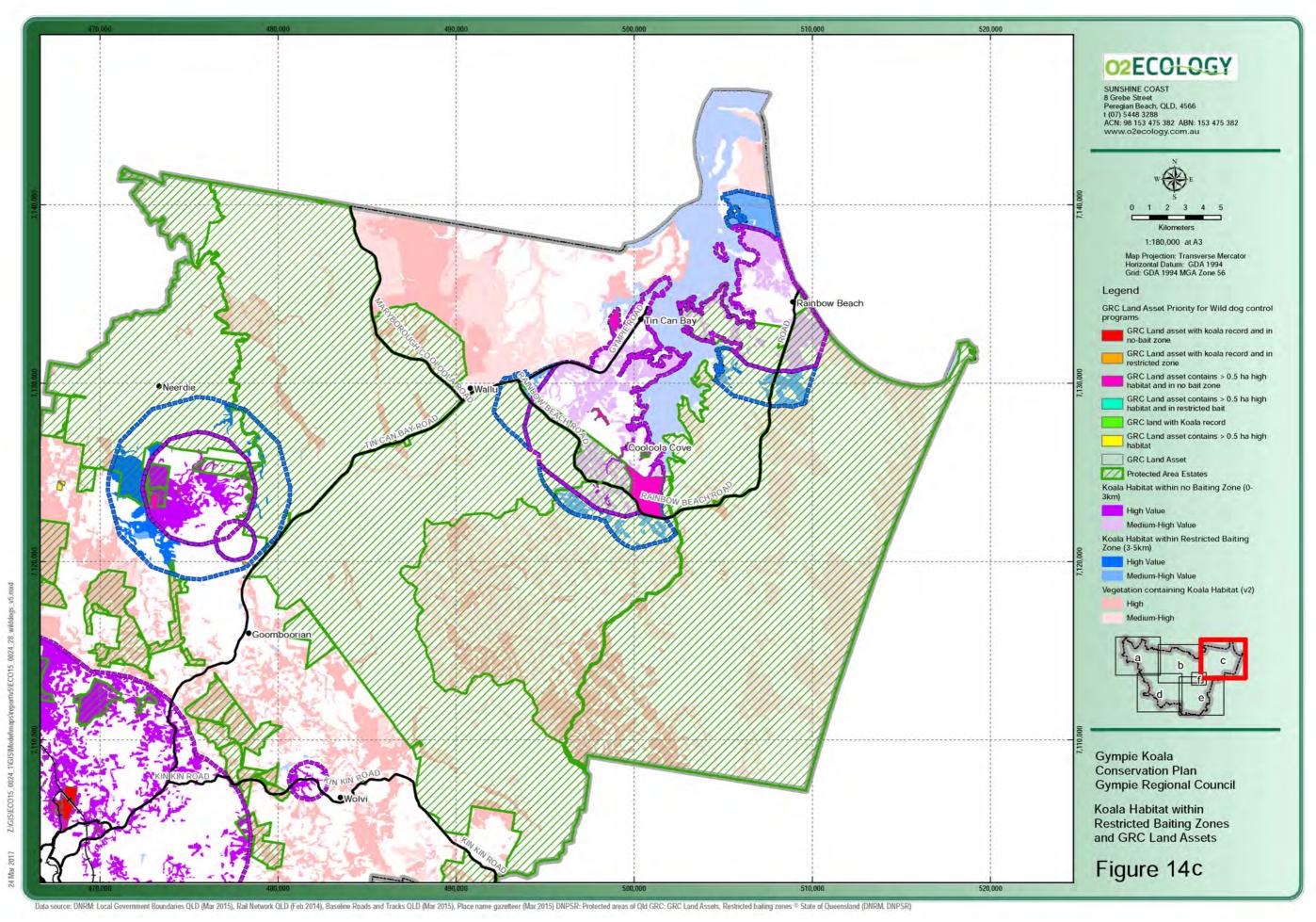
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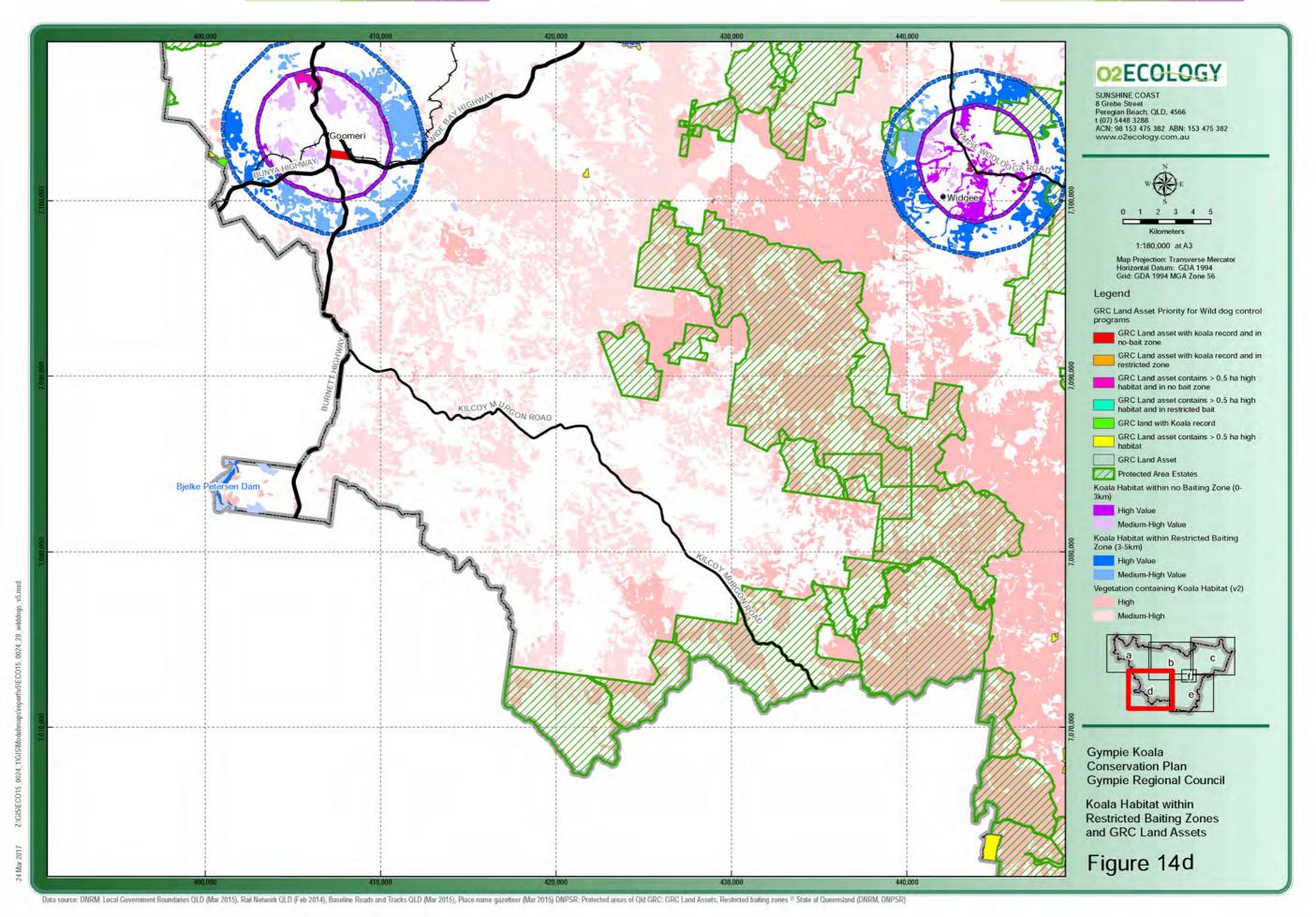


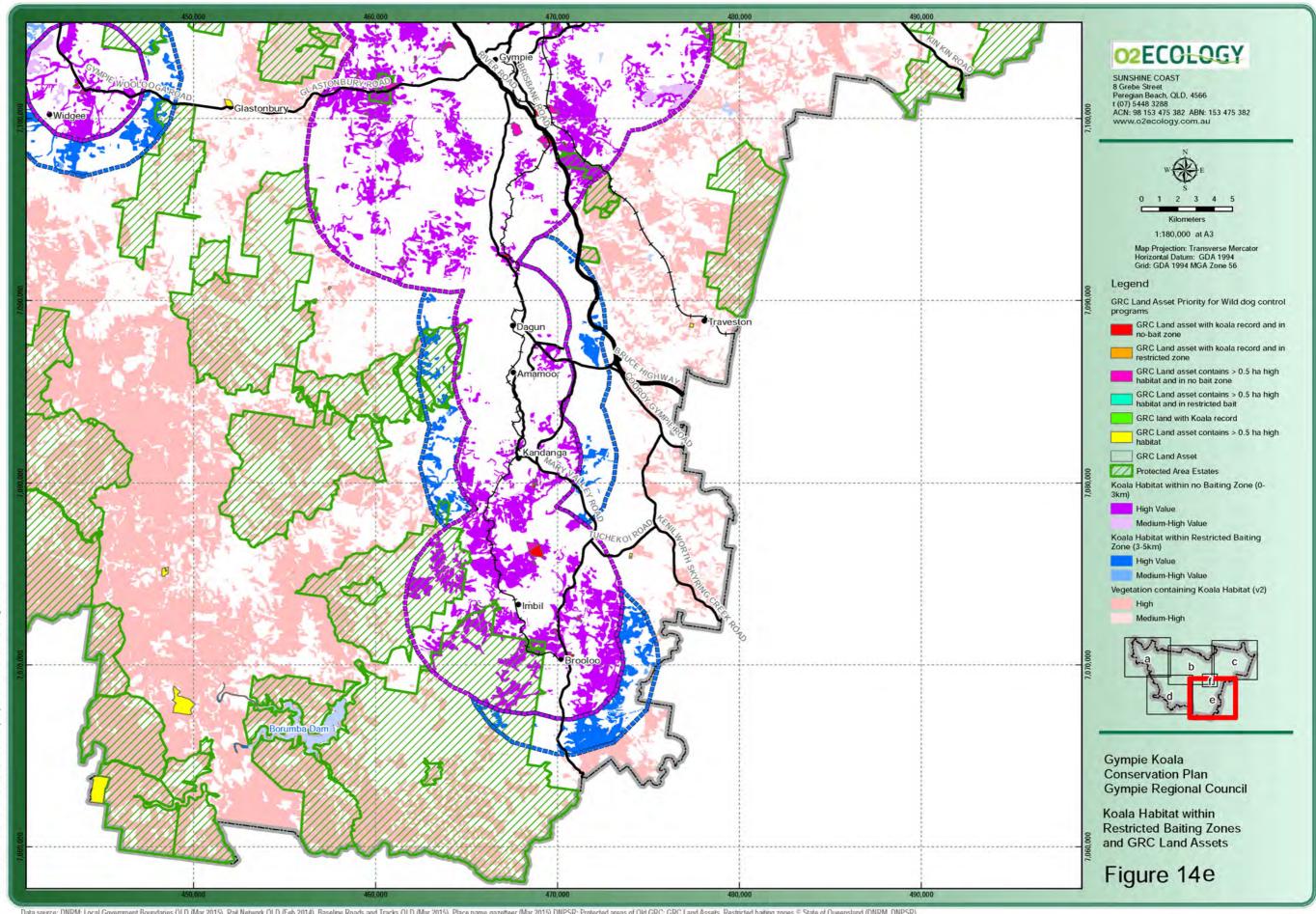
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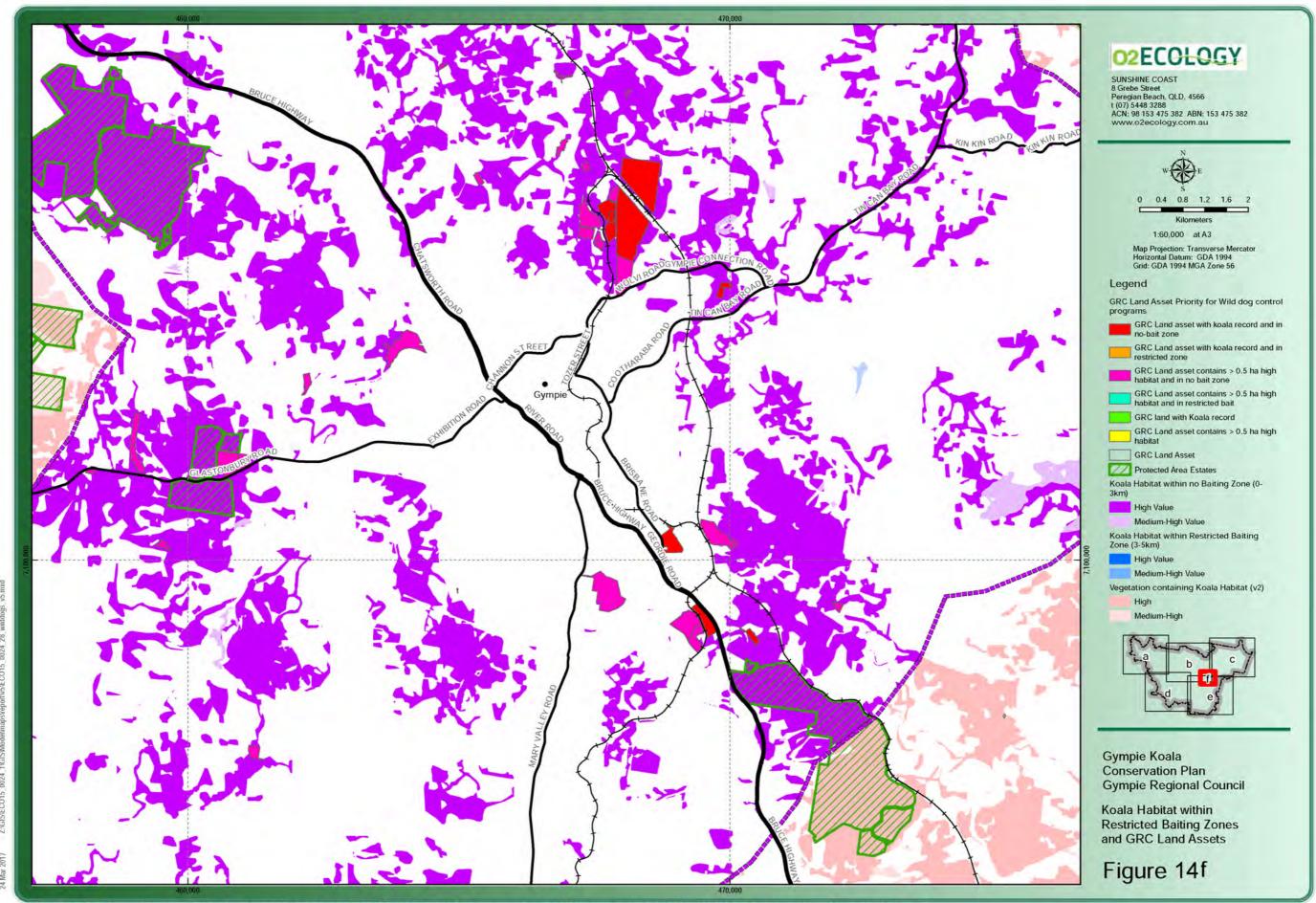




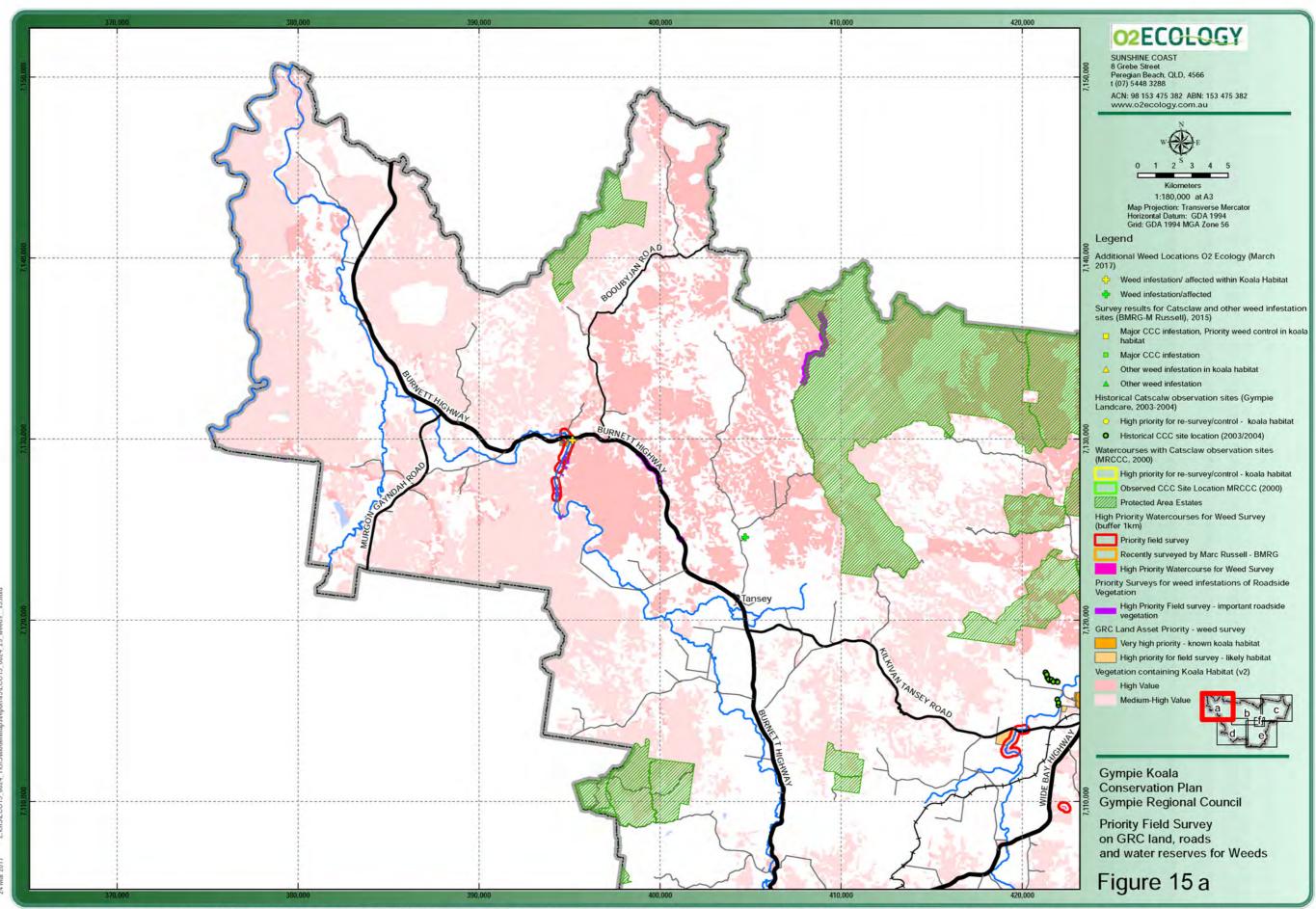




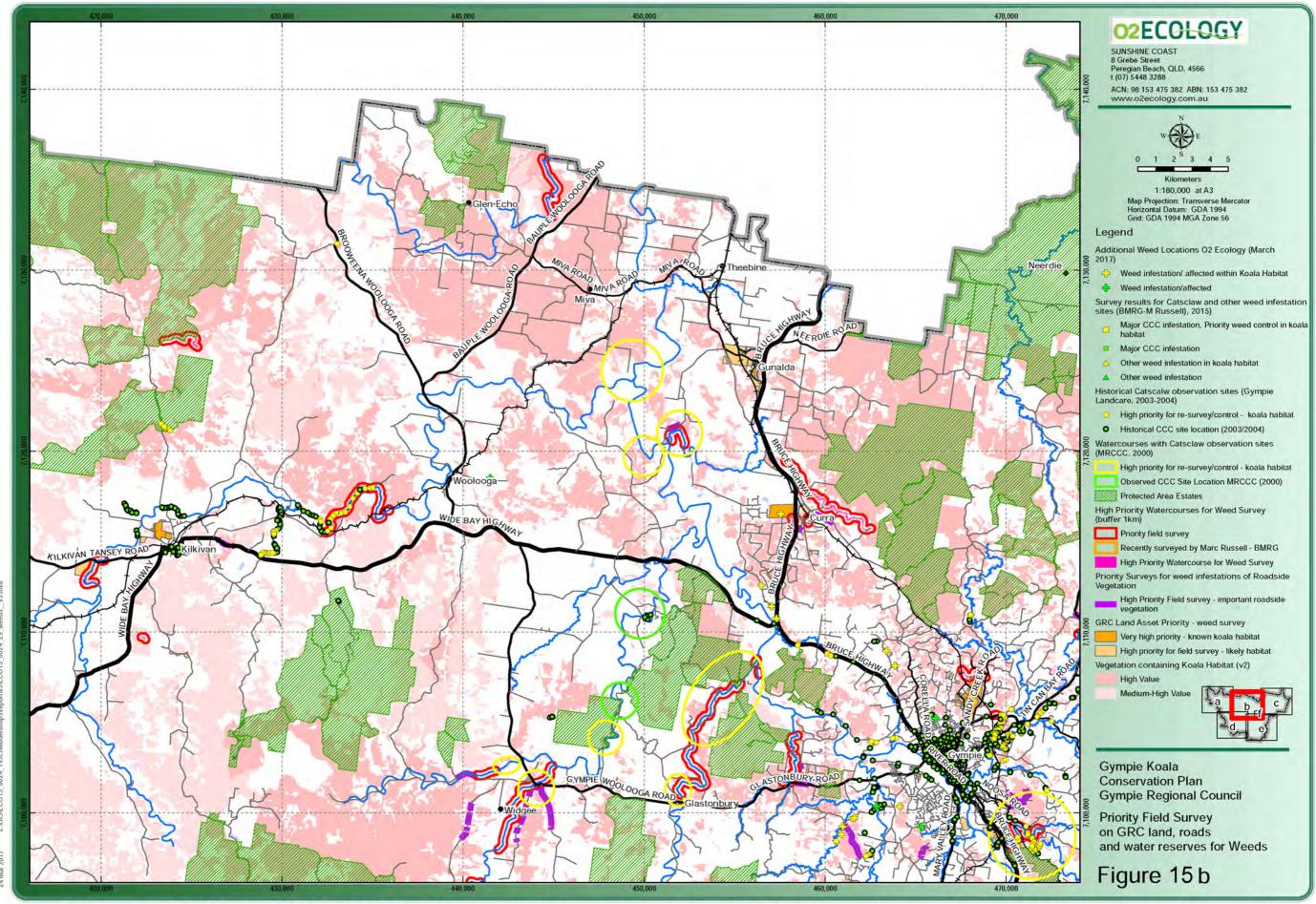




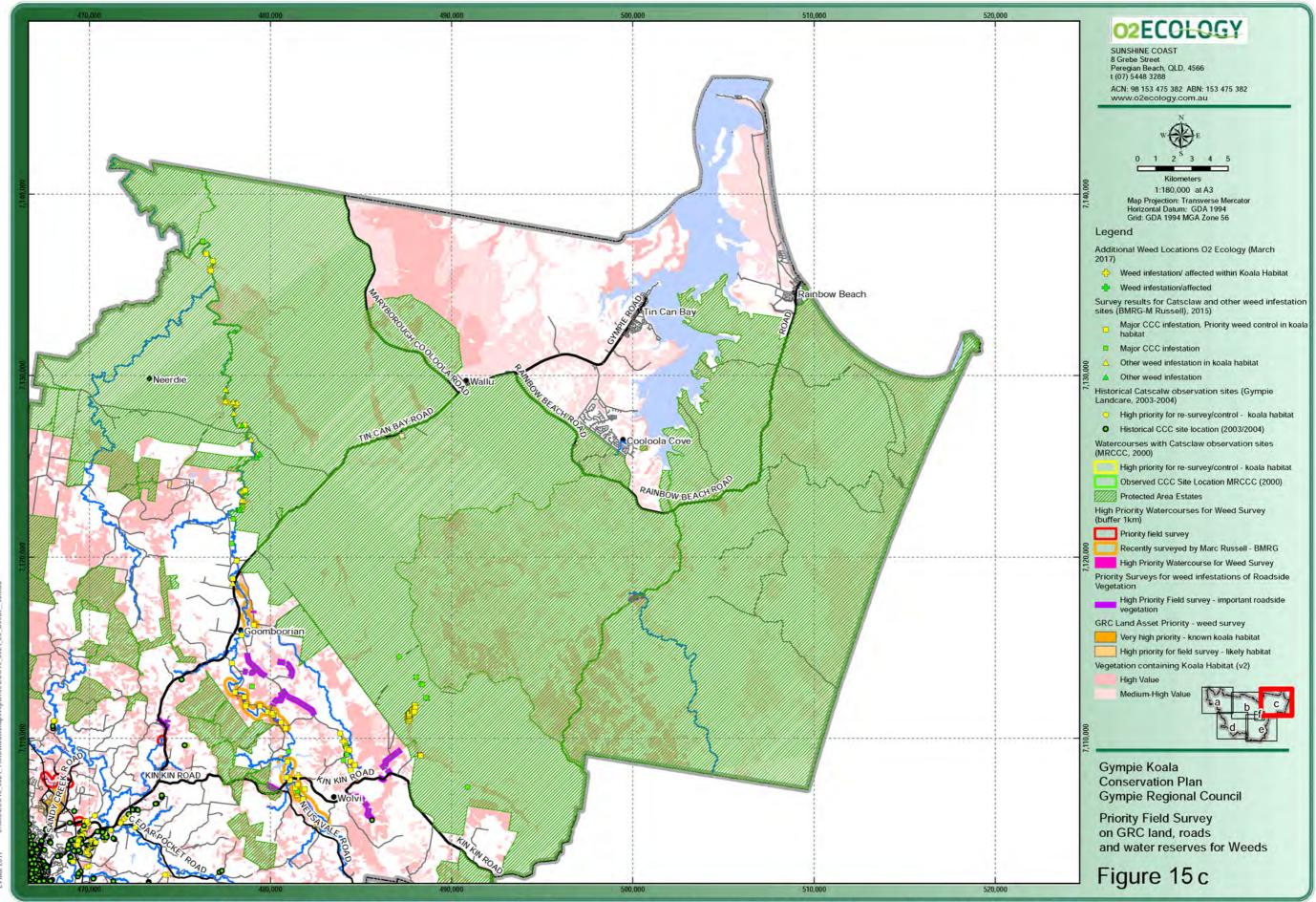
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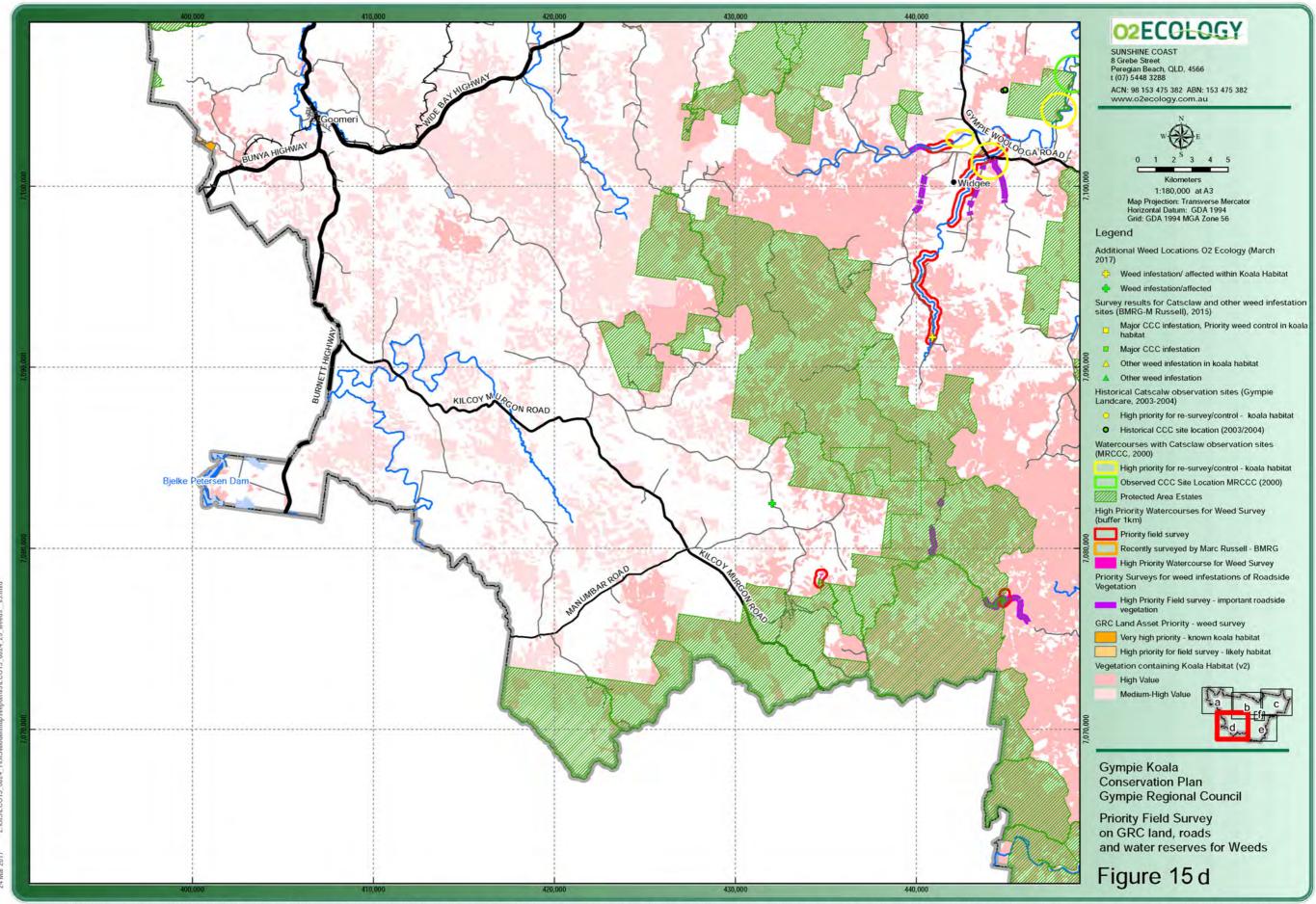
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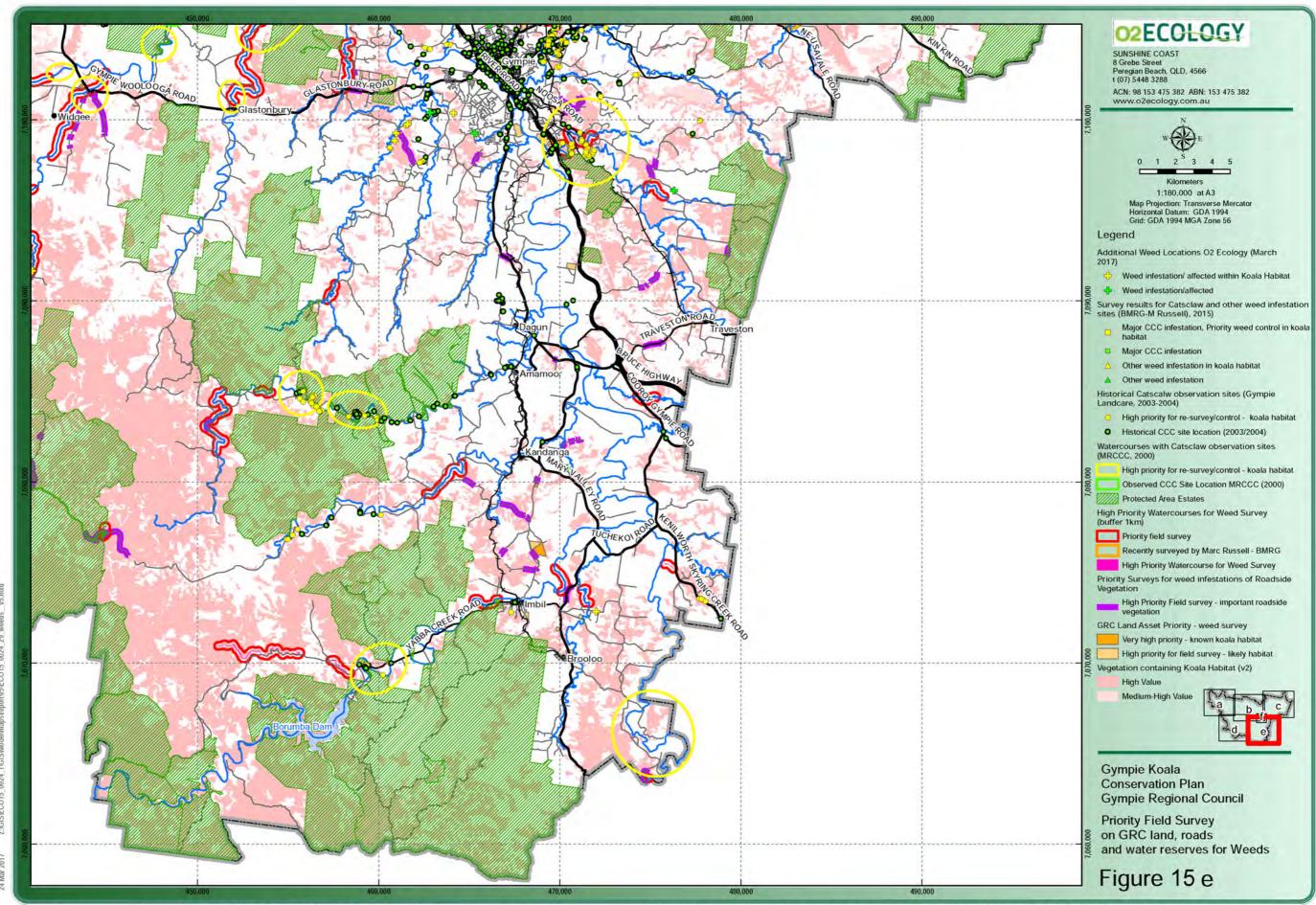
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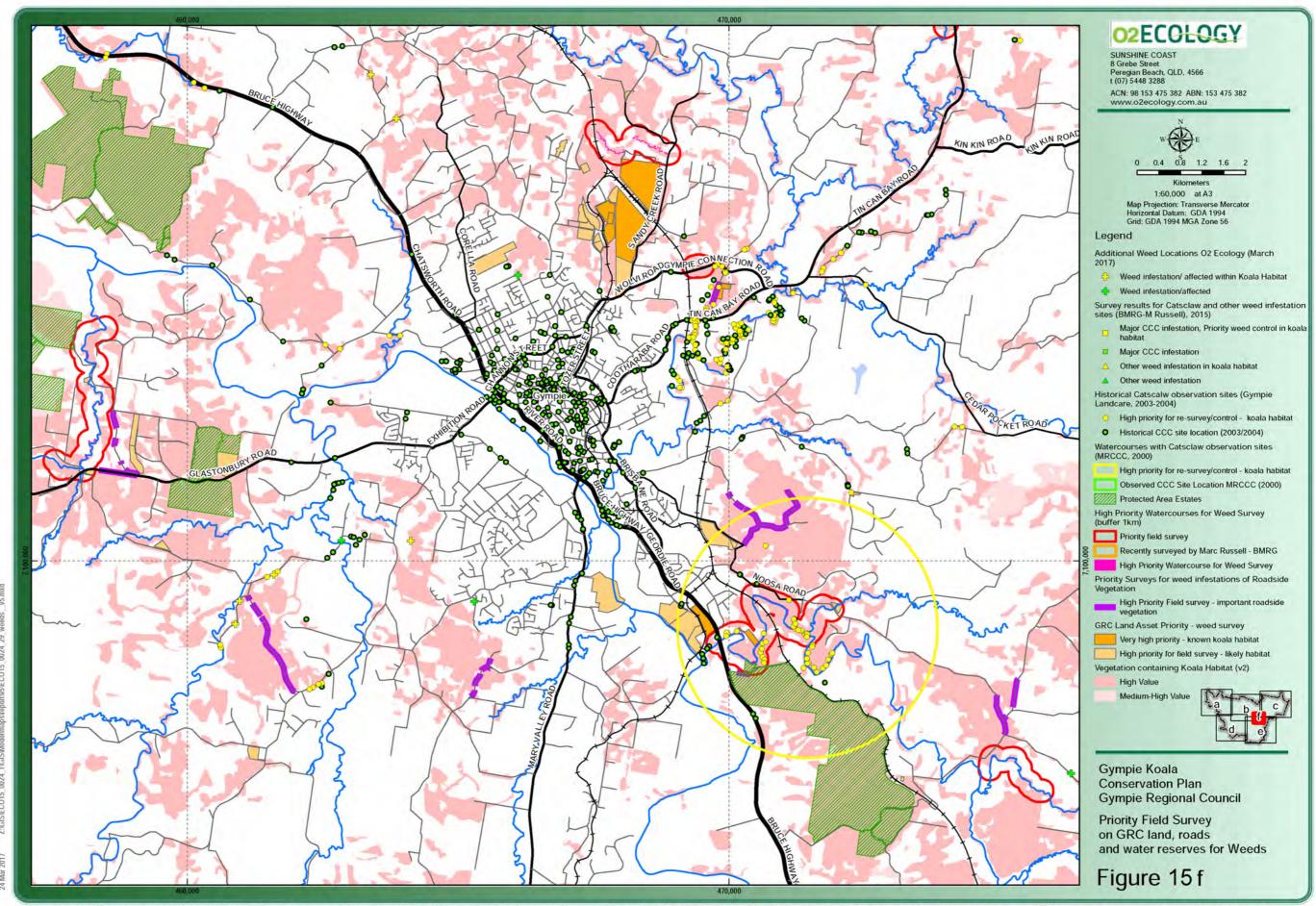
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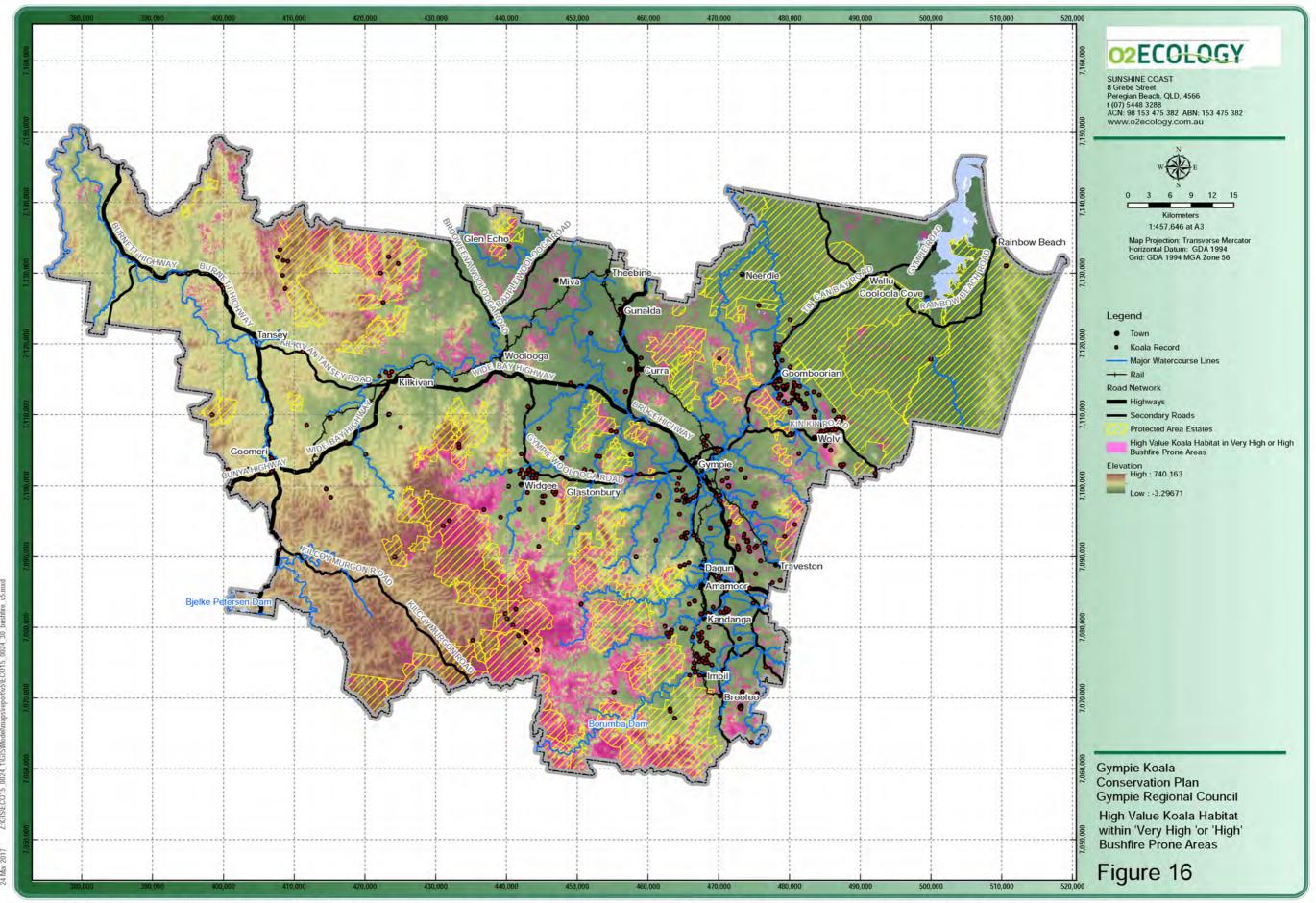
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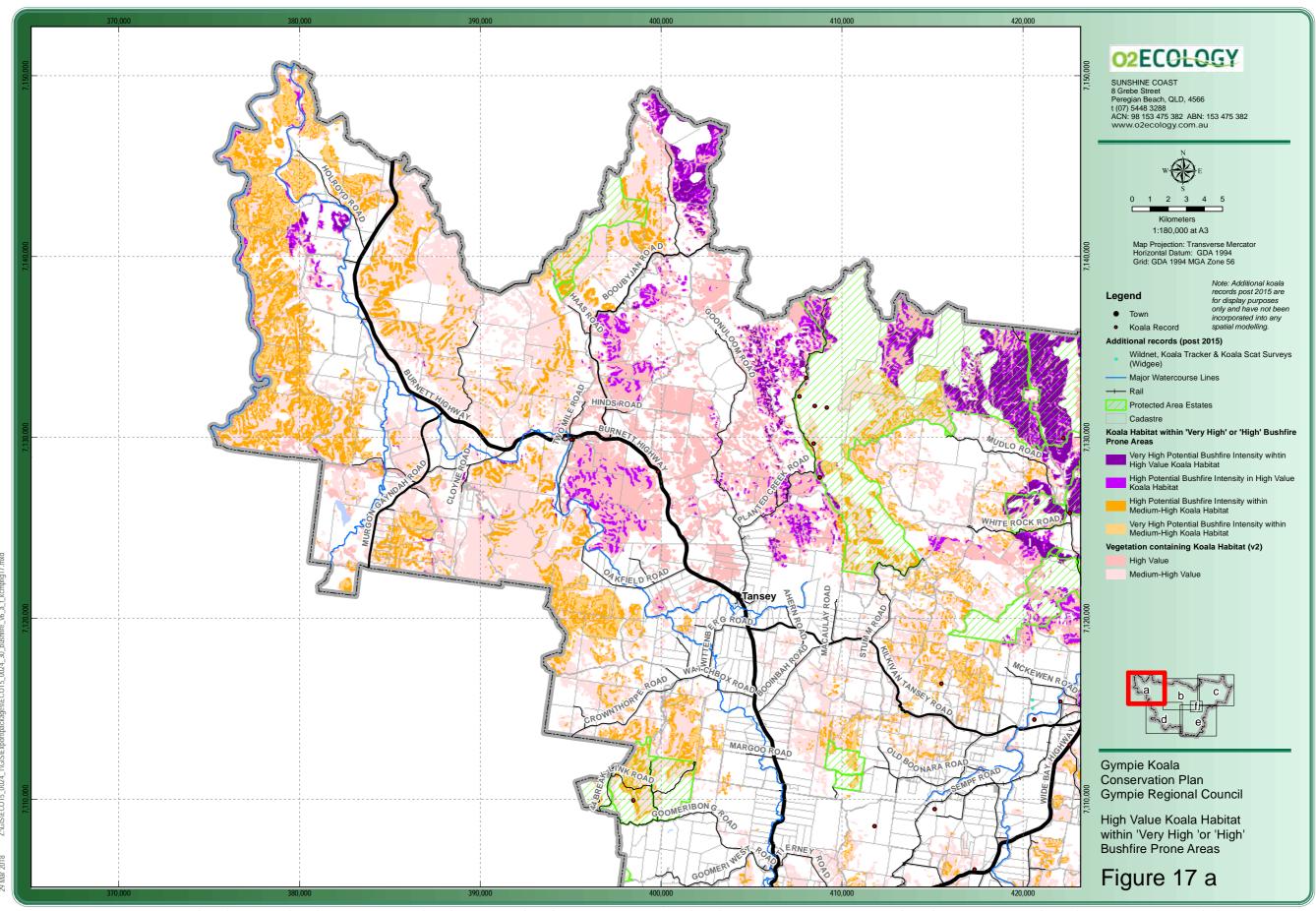
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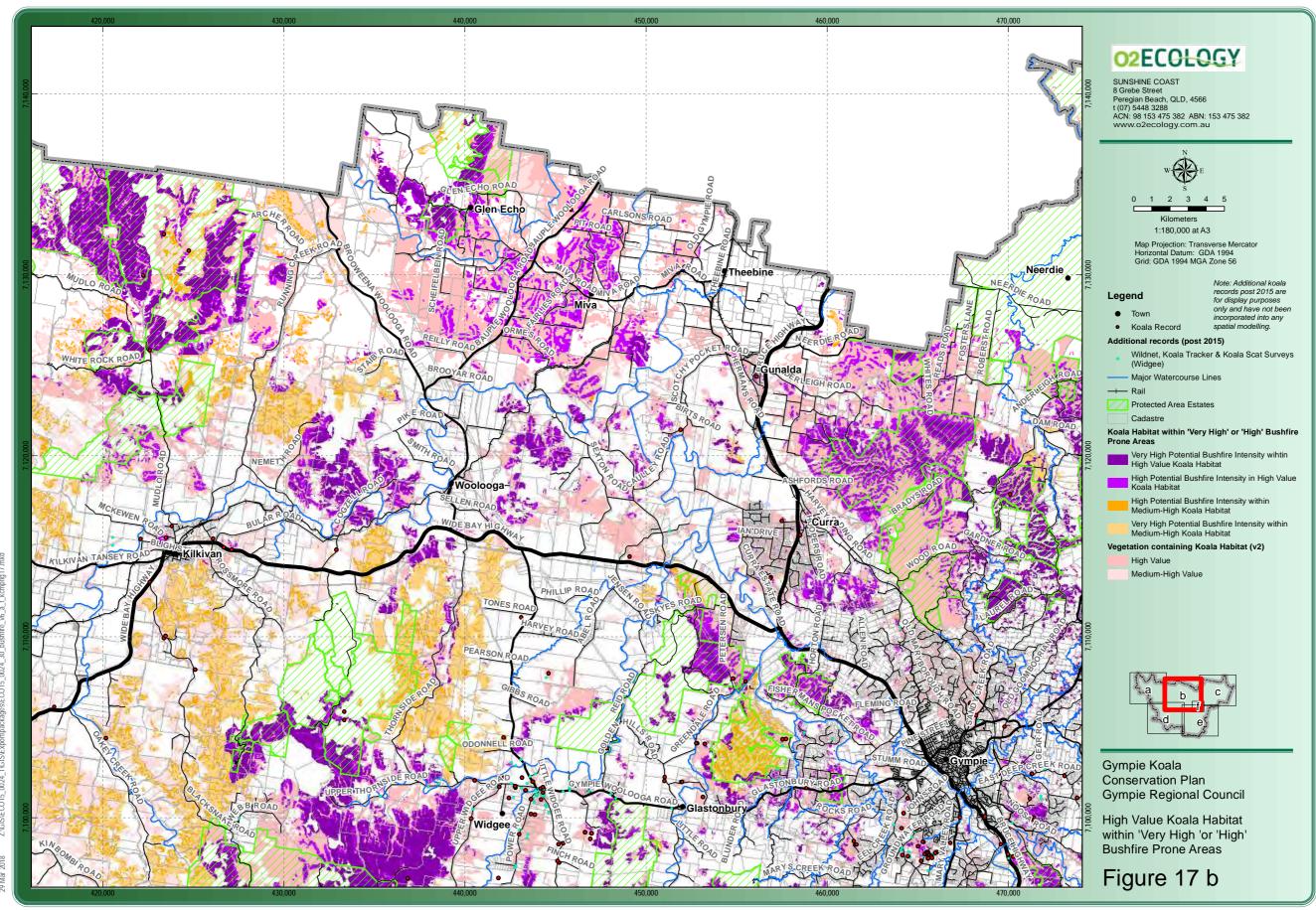
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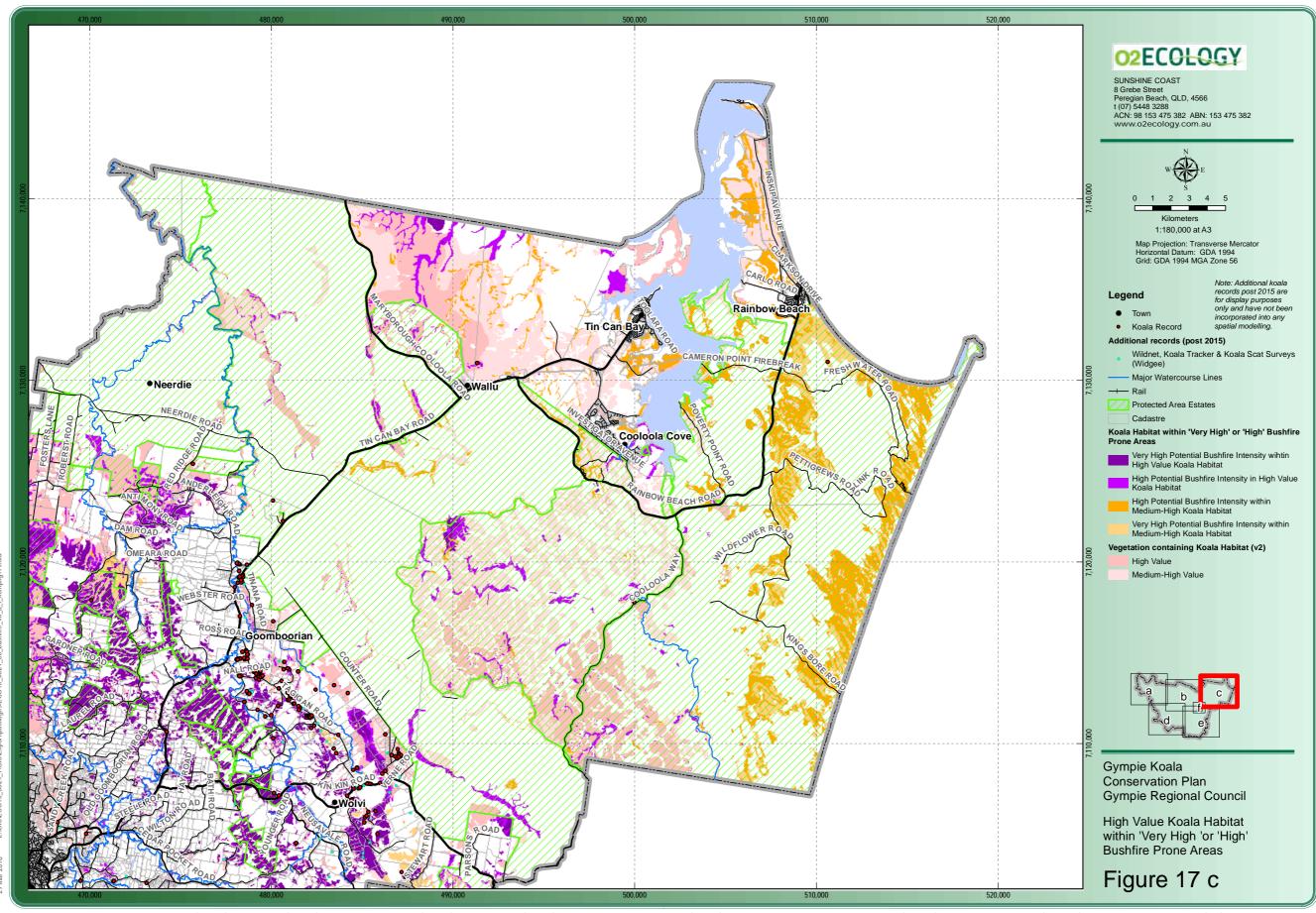
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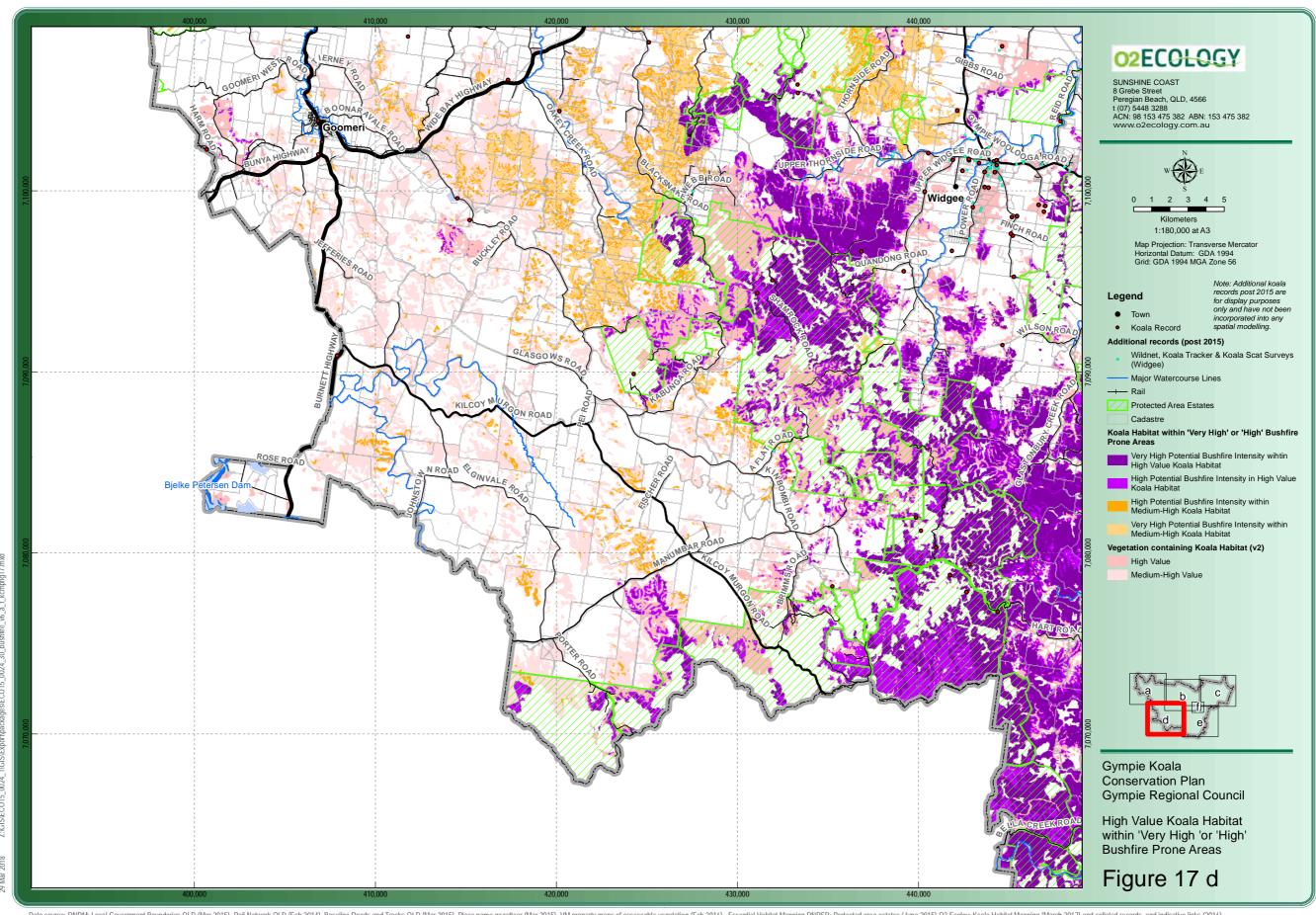
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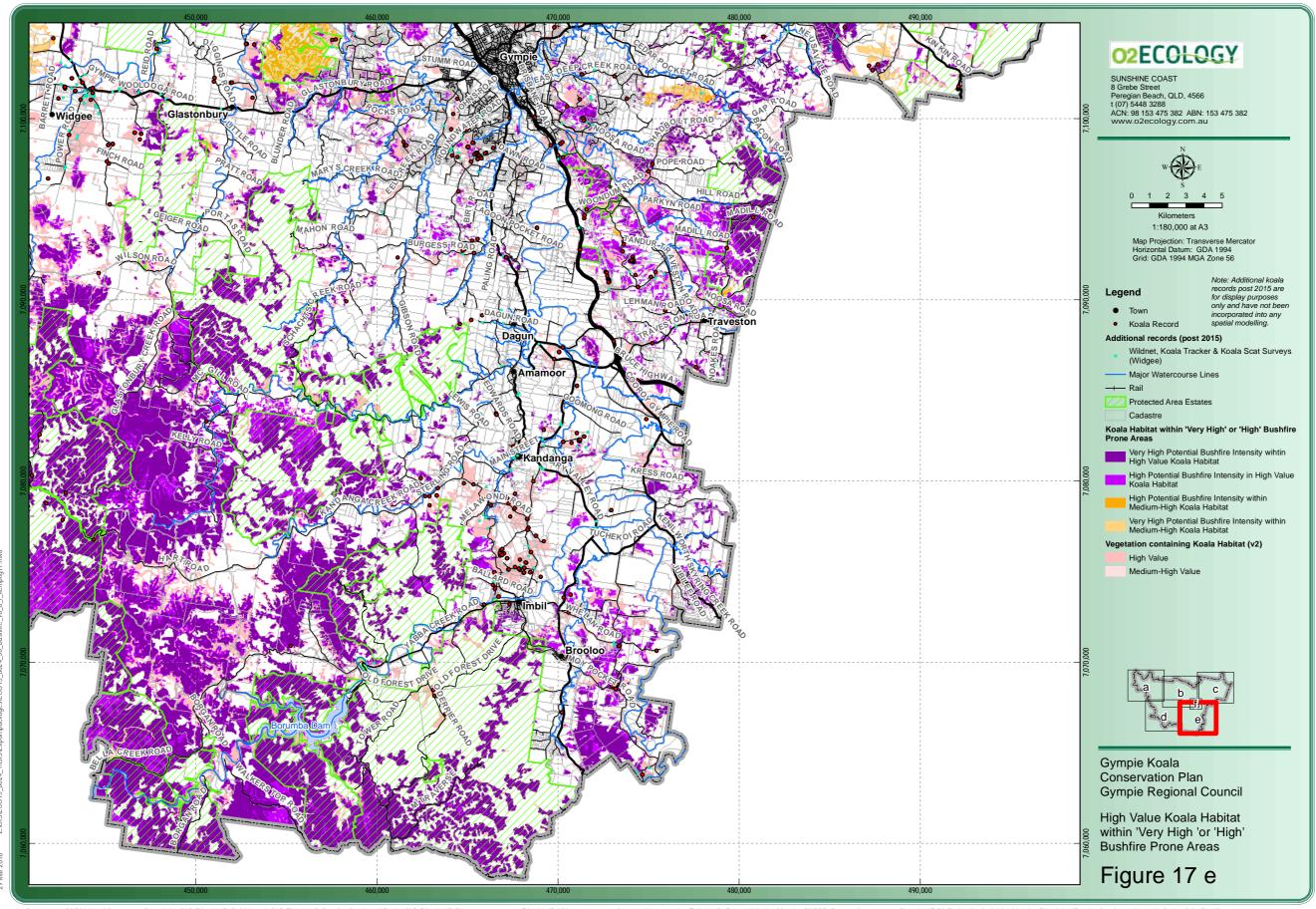
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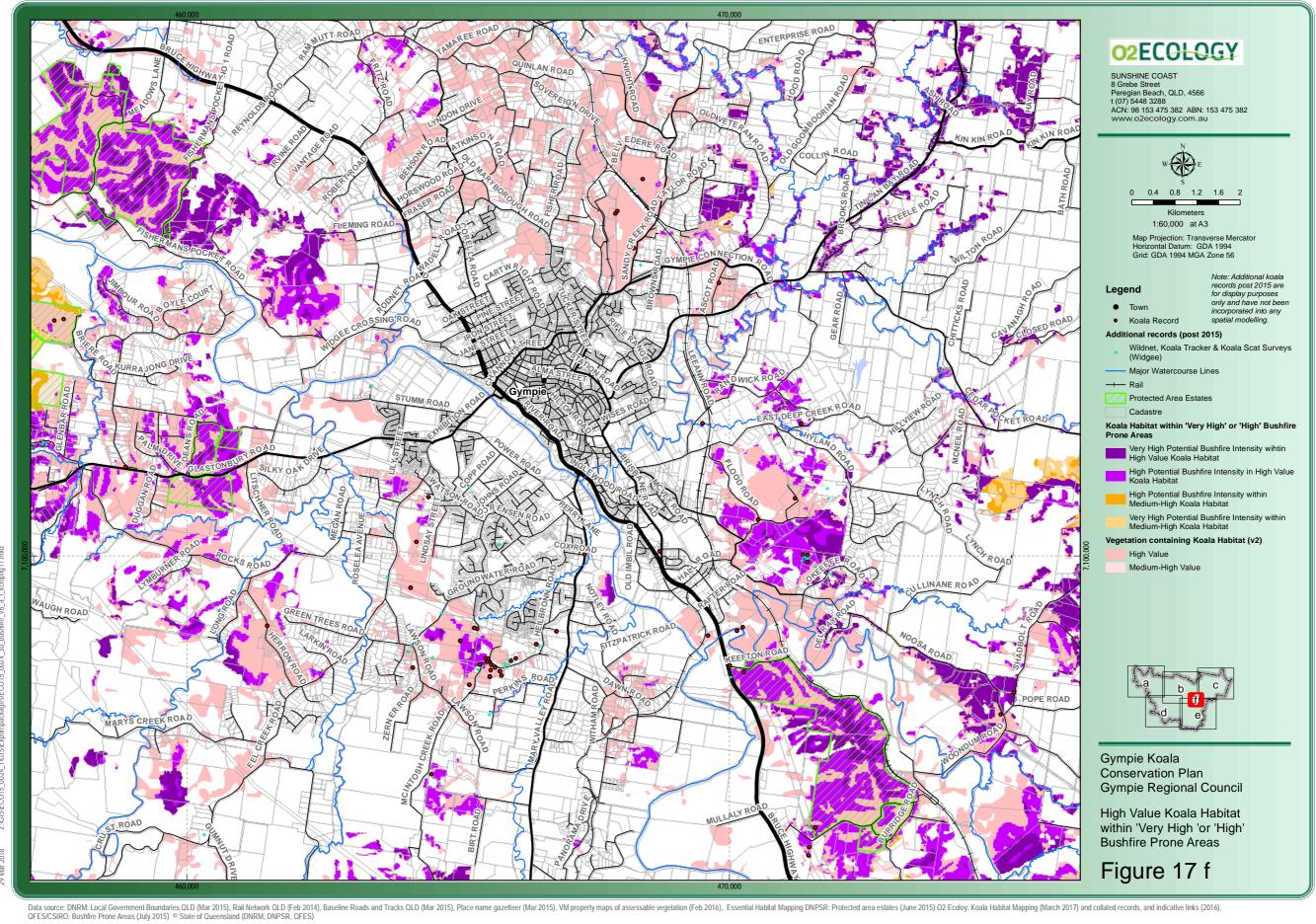
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Data source: DNRM: Local Government Boundaries OLD (Mar 2015), Rail Network OLD (Feb 2014), Baseline Roads and Tracks QLD (Mar 2015), VM property maps of assessable vegetation (Feb 2016), Essential Habitat Mapping DNPSR: Protected area estates (June 2015) © State of Queensland (DNRM, DNPSR, QFES)



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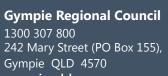
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