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Supply of Renewable Energy Spatial Analysis

Renewable Energy Spatial Analysis Report

ReCFIT

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Glossary

No.	Term	Meaning
1	GIS	Geographic Information System, used for the spatial analytics approach
2	Study area	The bounding extent of the area modelled for analysis.
3	Dataset	A vector or raster dataset representing a feature to be included in the overall modelling process. A dataset may contain one or more constraint layers , and may be used in the model directly, or as a supporting layer.
4	Vector	Spatial dataset represented by strings of X, Y coordinates. Includes point, line and polygon data.
5	Raster	Spatial dataset represented by rows and columns of grid cells at a specified cell size .
6	Grid cell	A single cell from a raster layer.
7	Cell size	The size (width and height) of the grid cell in a raster. * A 25m x 25m grid cell has been used
8	Constraint layer	A spatial layer extracted from a dataset which represents the presence of a feature which would have a material effect on the decision on whether the site for a proposed item of infrastructure would be suitable. Constraint layers can include opportunity or attractor layers which would <u>favour</u> the siting of the proposed infrastructure. * Each constraint layer is assigned a coding and rating
9	Coding	A unique numerical identifier assigned to each constraint layer included in the constraint model. * The coding allows statistical analysis to be gathered and presented.
10	Rating	A severity rating on a scale of 1 (favourable) to 5 (no-go) assigned to each constraint layer .
11	Constraint model	A raster dataset obtained by overlaying input data layers and using "map algebra" to combine the ratings from each input constraints layer into a single numerical output for each grid cell. Input layer ratings can be combined using any one of a number of statistical operators, including MAX , MIN , MEAN , RANGE , VARIETY , MINORITY , MAJORITY . * In our models we have used a MAX model and a combined MAX/MEAN model.
12	MAX analysis	A constraint model obtained by extracting the worst case, or MAX value, from all input data layers present at a grid cell. * This analysis represents a very conservative model
13	MEAN analysis	A constraint model obtained by extracting the MEAN value of all constraint layers present at a grid cell. Only constraint layers that have data at a location are considered and rated eg if the model as a whole comprises 8 layers but only 3 of these have data at a grid cell, the mean value of the 3 layers present is taken (i.e., sum/3, not sum/8). * This analysis has the effect of diluting any designated no-go (rating 5) layers.
14	MAX-MEAN analysis	To preserve the significance of no-go locations from any input data layer, but to obtain a less conservative constraint model, we combine the MAX and MEAN rasters in such a way that if a MAX of 5 exists anywhere, it is preserved, whereas the MEAN of all other locations is used for the rest of the model extent. * This is the preferred analysis, as it preserves the no-go rating and highlights areas elsewhere with the least number and severity of constraint
15	Iteration	An iteration is a re-run of a model scenario for the purposes of sensitivity testing or applying alternative ratings for <u>existing</u> constraint layers used in the model, or inclusion of additional datasets and their constraint layers.
16	Hexagonal tessellations	Hexagon analytics used on the constraint model to calculate statistics.
17	Candidate area	Candidate area of potential Renewable Energy Zone: an aggregated area shown to be suitable for the development or siting of proposed wind infrastructure.
18	Neighbourhood Analysis	The constraint cost surface derived from the modelling will show the distribution of ratings at the modelling resolution; however, most infrastructure site footprints are considerably larger than this. To obtain indicative locations for siting a representative footprint, a "neighbourhood" analysis is run by considering the statistics (MAX, MIN, MEAN, RANGE, VARIETY, MINORITY, MAJORITY) of a group of contiguous cells of a selected shape and area (square, circle, wedge, donut, etc) over the constraint cost surface.
19	Histogram analysis	When polygon aggregation is used, histograms of the constraint cost surface and any of the input constraint rating layers can be obtained to show their distribution within specific parcels. This facilitates the effective comparison of candidate sites whose overall "scores" may be similar.

Executive Summary

Aurecon Australasia Pty Ltd (Aurecon) was appointed in January 2022 to carry out a spatial analysis to identify candidate areas for renewable wind energy development on behalf of the Renewables, Climate and Future Industries Tasmania (ReCFIT).

Detailed geospatial mapping analysis (the analysis) was undertaken, building on previous work from Australian Energy Market Operator (AEMO) and TasNetworks and drawing together a range of data layers from Tasmanian Government agencies to identify potential candidate renewable resource areas for multiple large-scale projects to be developed in close proximity.

This project is a key action under the Renewable Energy Coordination Framework and will inform the identification process for Tasmania's first region for further investigation of Renewable Energy Zones and Government's understanding of the spatial implications of the development required to meet the Government's 200% Renewable Energy Target.

A representative Technical Working Group (TWG) drawn from key agencies within the Tasmanian Government was established. This TWG provided direct input to the model development through a series of technical workshops.

A total of 382 individual spatial attributes from over 60 spatial data layers were used in the modelling. A base-case model at a resolution of 25m was obtained over the study area, which comprised most of the Tasmanian mainland, north of Hobart.

The base-case model was aggregated into 1,000ha hexagons, each of which represented approximately 100MW of wind generation potential. In order to identify candidate areas, the analysis identified areas which had the ability to host multiple large-scale projects (clusters of 5 or more hexagons).

A total of candidate areas were identified through this process with candidates primarily located in the North-west, Central and North-east regions of Tasmania. Combined, these candidate areas total 712,000ha of land with 600,000ha private land (84%) and 112,000ha Crown Land (16%), and a potential generating capacity of approximately 72GW.

1 Introduction

1.1 Purpose and Objectives

The purpose of the Renewable Energy Spatial Analysis is to identify candidate areas to support renewable energy growth, through a systematic and data driven process, taking into consideration Government's existing objective and policies. The primary focus of the analysis was wind generation, a secondary analysis considered solar. This analysis would include high quality wind resources that are technically developable and relatively unconstrained taking into consideration values under the Tasmania's resource management and planning system including land use and resources, protected lands, heritage and natural values.

The use of Aurecon's Site Suitability Assessment Tool (SSAT®), used at a desktop-level, is the first step in identifying those suitable candidate areas.

The objectives from this process are to:

- Identify candidate renewable energy candidate areas
- Inform Government decision making on where to direct renewable energy growth and development i.e., 'optimal location's that provide for the protection and enhancement of Tasmania's core sustainability values
- Inform the identification process for Tasmania's first region to be explored in detail for its potential to host the State's first Renewable Energy Zone
- Assist with future community and stakeholder consultation

This analysis is based on current available spatial data. The candidate areas represent an initial base case result, using the outlined SSAT® methodology (Section 1.2.1) and will require further refinement of candidate areas to better understand the values within each of these areas. Other considerations include values not currently mapped, regional or community values that may not be covered by the SSAT® but are important for community support, and economic implications.

1.2 The approach

The approach to the candidate area identification is based on Aurecon's SSAT® methodology. This is a data-driven approach that can be further utilised in the future at a granular level for actual siting, including wind turbine and solar site identification, transmission easements and sub-station site selection. And, where additional and new information is gathered and obtained, with community inputs, qualitative data and site specific studies, the model can be further enhanced at any time.

1.2.1 Spatial approach

SSAT® is a tool that adopts a multi-criteria risk assessment framework. This helps to de-risk the selection of a candidate area, taking into consideration areas of significant planning constraint, heritage significance, environmental, natural and resource (mining, forestry and agriculture) areas. The representative data of these values are rated and incorporated into a constraint model to identify their cumulative worth on the basis of a 25m grid that is calculated across the study area. This is defined within a GIS constraint model. Further focus is given to the areas of high wind resource, and these areas are analysed with a machine data-driven site selection process that identify candidate areas of least known constraint. Statistical results are generated that are robust and defensible. The benefits of applying a machine data-driven site selection tool area outlined below:

- The non-biased data driven approach, broadens the options and reduces risk of initial human error.
- Regulators have greater evidence and confidence in the route and site selection process avoiding sensitive receptors.
- Provides a formal tool and transparent process for the technical experts to engage in
- Repeatable, data records, digital access, and statistical outputs

- Supports initiatives and frameworks with reduced overall approvals, landholder and social risk mitigation

The process is summarised by Figure 1 below and detailed further in this document.

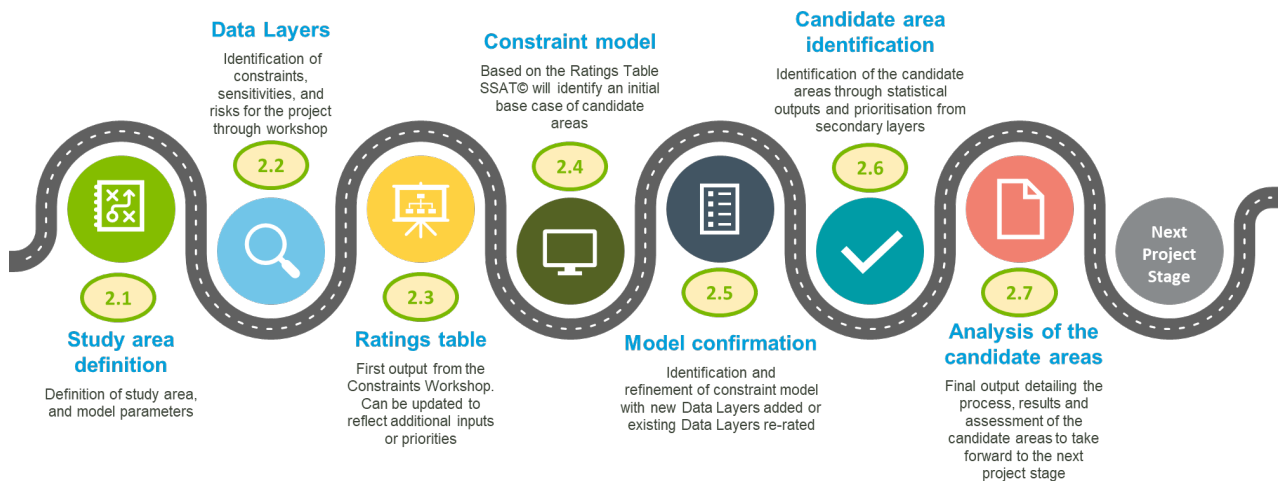


Figure 1: Methodology used for Candidate area identification

1.2.2 Technical Working Group (TWG)

The participation of the Technical Working Group (TWG) was integral to ensure all known data inputs were considered, and that the outcomes of the modelling and associated processes accepted. Since SSAT© depends entirely on the ratings assigned to each feature in each spatial layer, it is essential to gain consensus on the model composition and ratings from the technical experts prior to performing any analysis.

The TWG consisted of representatives of the following key Government agencies:

- ReCFIT – Major Renewable Energy Projects
- Department of Natural Resources and Environment - Forest Policy, Tasmania Parks and Wildlife Service and Environment
- Department of Premier and Cabinet - State Planning Office and Heritage Tasmania
- Department of State Growth -Mining Policy

The TWG identified the data layers that best represent the constraints and opportunities relevant to their area of responsibility. These data layers were then rated for severity of constraint and opportunity.

2 Candidate Area definition

2.1 Study Area Definition

The study area as shown Figure 2 represents the defined area that the analysis was undertaken across the State.



Figure 2: Study area

2.2 Dataset selection

The analysis considered the following key criteria to identify best locations for candidate areas:

- **Energy resource** - the level of wind resource and other technical constraints impacting generation capacity
- **Environmental, heritage and land use** - potential land use conflict or impacts on sites of environmental and heritage value.
- **Cost effectiveness** - proximity to existing transmission infrastructure
- **Investor** - proximity to areas with the highest probability of commercial development¹

Dataset selection criteria were taken into account to address these key criteria. Selected datasets fall into two main groups, discussed further below:

- Primary datasets
- Secondary datasets

The TWG identified all spatial datasets that best represented the constraints and opportunities within their disciplines of expertise. Spatial datasets were accessed from Tasmania's Open Data Spatial Portal (The List) and additional datasets were supplied by the TWG, where the dataset was not publicly available.

2.2.1 Primary datasets

Primary datasets consist of those spatial layers identified as being critical determinants for the target outcome and requiring direct inclusion in the constraint model to identify a candidate area (refer Table 1). A detailed dataset including all attributes input to the constraint model is included in Appendix B: Datasets used.

¹ sourced from the Register of Interest process

Table 1: Primary datasets

Category	Dataset	TWG representative
Agriculture	CLUM TAS	State Planning office/Agriculture policy
	List Land Capability	
	Tasmanian Irrigation Transmission Lines	
Forestry	Forestry Constraint Ratings	Forestry policy
	Tasmanian Reserve Estates	
	Public Land Class (Forestry)	
	Private Timber Reserves	
Heritage	Tasmanian Heritage Register (Polygons)	Heritage Tasmania
	National Heritage Public	
Hydrology	Hydrology Lines	Environment
	Hydrology Areas	
	Irrigation Tasmania Dams	
	Irrigation Tasmania Pipelines	
	Floodplain 1:250k	
	Public Flood Inundation Extent Models	
Infrastructure	Enwave Gas Declared Pipeline Corridor	ReCFIT
	Gas Pipeline Planning Corridors	
Mining	Leases (500m buffer)	Mining Policy
	License Categories 1-6 (exploration only)	
	Retention Licenses (500m buffer)	
	Mining State Areas	
Natural Values	Geoconservation sites	Environment
	Private Reserves (Conservation Covenants)	
	Private Nature Reserve and Conservation Covenant (NCA)	
	Private Sanctuary and Conservation Covenant (NCA)	
	Local Government Reserves	
	Raptor Nests (500m buffer)	
	Threatened Flora	
	Threatened Fauna	
	Threatened Native Vegetation Communities	
	Tasveg 3.0	
Parks	Private Reserves	Parks & Wildlife Service
	Public Land Class	
	Ramsar Wetlands	
	Tasmanian Wilderness WHA	
	Tasmanian Reserve Estates	
Planning	Interim Planning Scheme Overlays	State Planning Office
	Interim Planning Scheme Zoning	
	Land Tenure	
	Planning Scheme Code Overlays	
	Planning Scheme General Overlays	
	Planning Scheme Zones	
	Prohibited Areas	
Terrain	Acid Sulphate Soils (Inland and Coastal)	ReCFIT
	Karsts	
	NCH Landform Classifications	
Wind	Global Wind Atlas, Australia	ReCFIT

2.2.2 Secondary datasets

Secondary datasets consist of those data which do not necessarily represent critical constraints yet could be used to further assess or prioritise or inform candidate areas derived from the constraint model. These datasets are referenced below and the further analysis is detailed in the Figures found in Appendix J: Candidate areas and secondary datasets.

- Proximity to transmission networks
- Industry interest
- Solar

2.3 Data Ratings

2.3.1 Model Rating

SSAT© uses a 5-point **rating** scale to indicate the level of severity of each identified constraint. Since the modelling workflows involve the use of least-cost algorithms, the rating scale places the most favourable conditions at 1, running to the most severely constrained locations at 5, as shown in Table 2.

Table 2: Constraint rating scale

Rating	Description
1	Negligible or no constraint to the siting of the proposed facility. This value can also be used to indicate opportunities or favourable siting considerations.
2	Moderate constraint to the siting of the proposed facility
3	Medium constraint to the siting of the proposed facility: possibly OK but requires further investigation
4	High constraint to the siting of the proposed facility: probably not OK but requires further investigation
5	Very High/No-go constraint to the siting of the proposed facility

Every constraint layer was assigned a **rating** according to the above scale by the responsible TWG representative (Appendix C: Rating table). The assignment of standard numeric rating values in this way facilitates the comparison of widely disparate and differing datasets on the same scale.

2.4 Constraint model

Each constraint layer is converted into raster (25m raster grid cell), and the rating from the rating table is assigned to each raster grid cell. These raster grid cells share the same origin, size and extent which allows them to be combined into constraint models using differing map algebra (Figure 3).

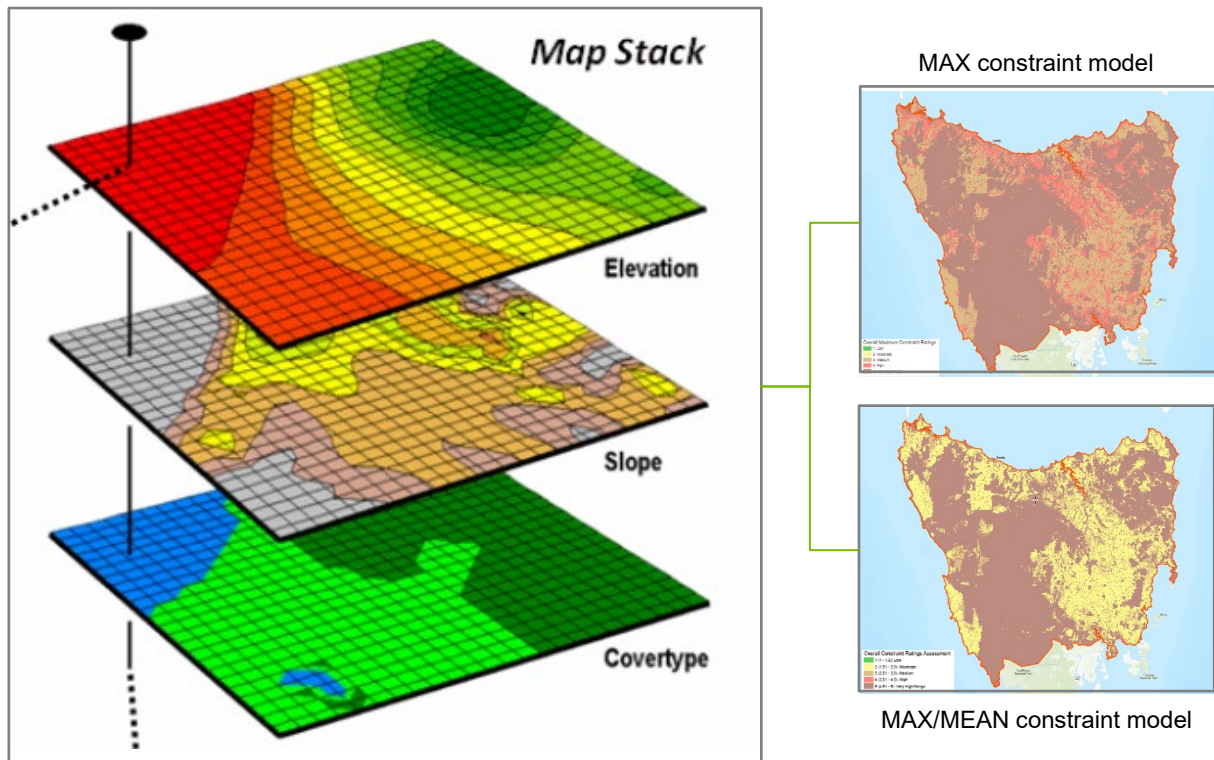


Figure 3: Grid constraint model (map stack)

2.4.1 MAX constraint model

This analysis uses the maximum rating value within each constraint layers grid cell (25 m x 25 m) to create a maximum (i.e., worst-case) value for the constraint model. The model is initially run per category (Agriculture, Heritage, Hydrology, Infrastructure, Mining, Natural Values, Parks, Planning and Terrain) then combined together to create a combined Maximum (MAX) constraint model. The result is shown below in Figure 4 (also included in Appendix E: Model outputs).

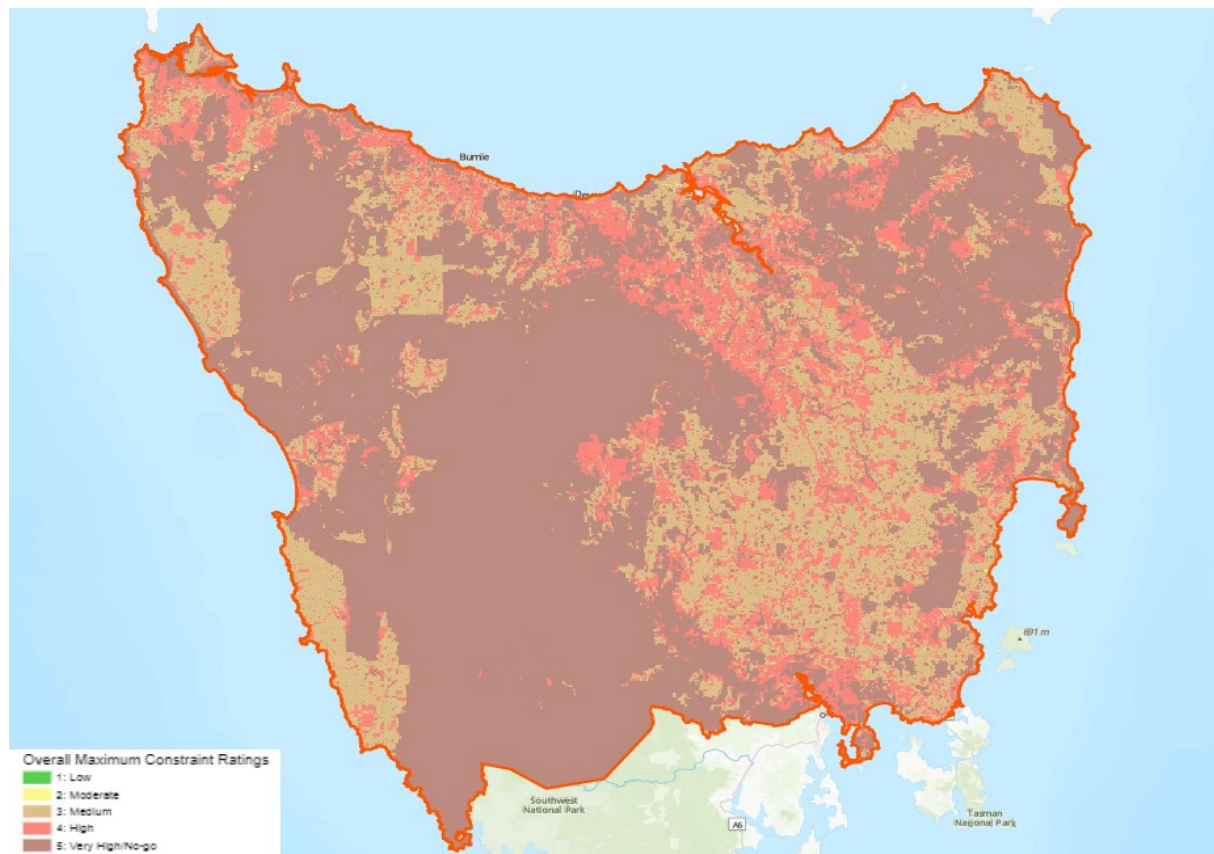


Figure 4: Overall Max combined constraint model

Once the candidate area is defined, this model is used to highlight to the TWG which category grouping (Agriculture, Heritage, Hydrology, Infrastructure, Mining, Natural Values, Parks, Planning and Terrain) is affected mostly within that candidate area. Those areas of maximum constraint are detailed in Appendix I: Candidate area one-pagers.

2.4.2 MAX/MEAN constraint model

This model is used to define the candidate areas. It is a combination of a MAX model and a MEAN model. The outcome of this model preserves the significance of very high/no-go locations, while obtaining an understanding of cumulative impact for all other locations.

If a MAX rating (5) exists anywhere, it is preserved, whereas, for all other constraint layers present at a grid cell level (rated 1-4) the MEAN is adopted. This provides the best understanding of areas with least impact. Only constraint layers that have data at a location are considered and rated. The result is shown below in Figure 5 (also included in Appendix E: Model outputs).

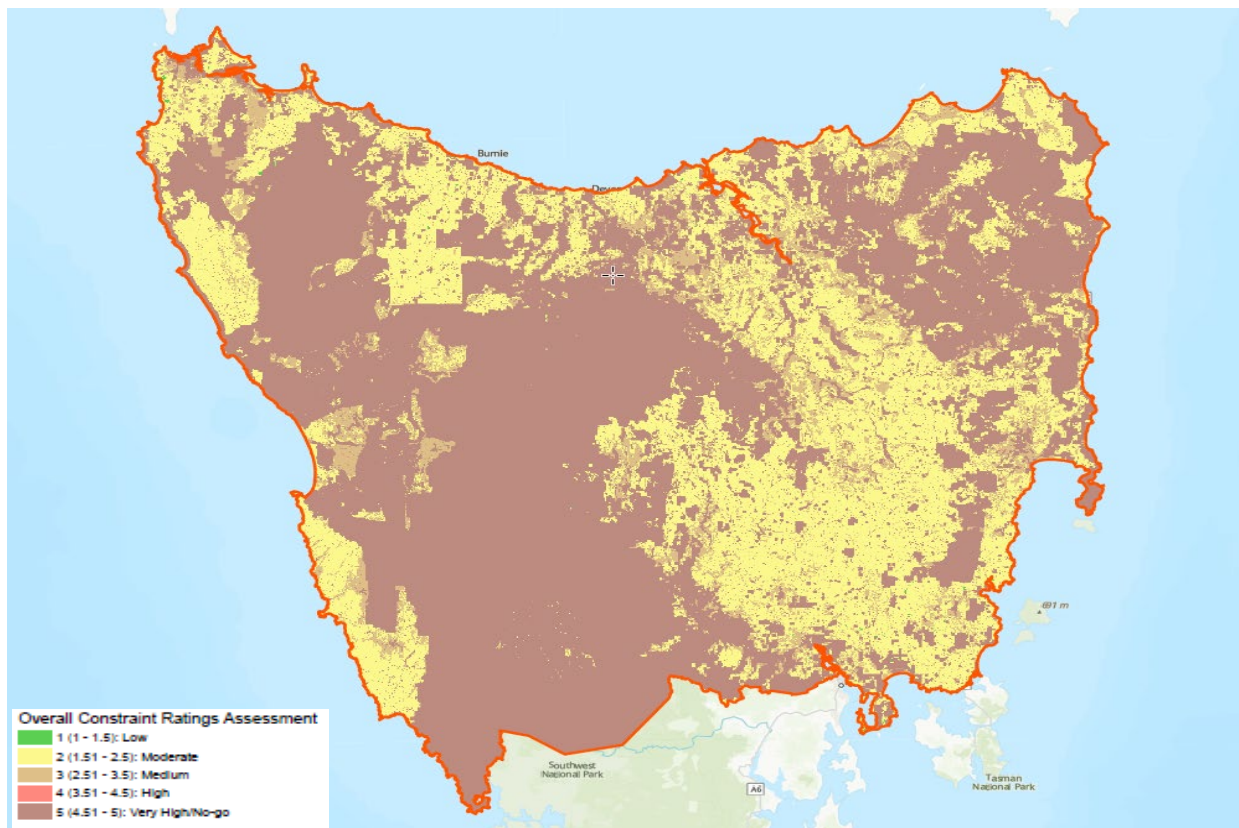


Figure 5: Max/Mean constraint model

2.5 Model confirmation (risks and opportunities)

On completion of the initial constraint models, a series of maps were created for each category and distributed for review by the TWG. A risk and opportunities workshop reviewed these outputs and identified opportunities for constraint model improvement. In the session, the datasets, rating table and category maps were reviewed by the TWG, with some minor changes highlighted.

It was identified that the mining constraint layer Strategic Prospectivity Zones (SPZ) significantly influenced the model, as it spatially represented a large proportion of the State, refer Figure 6.

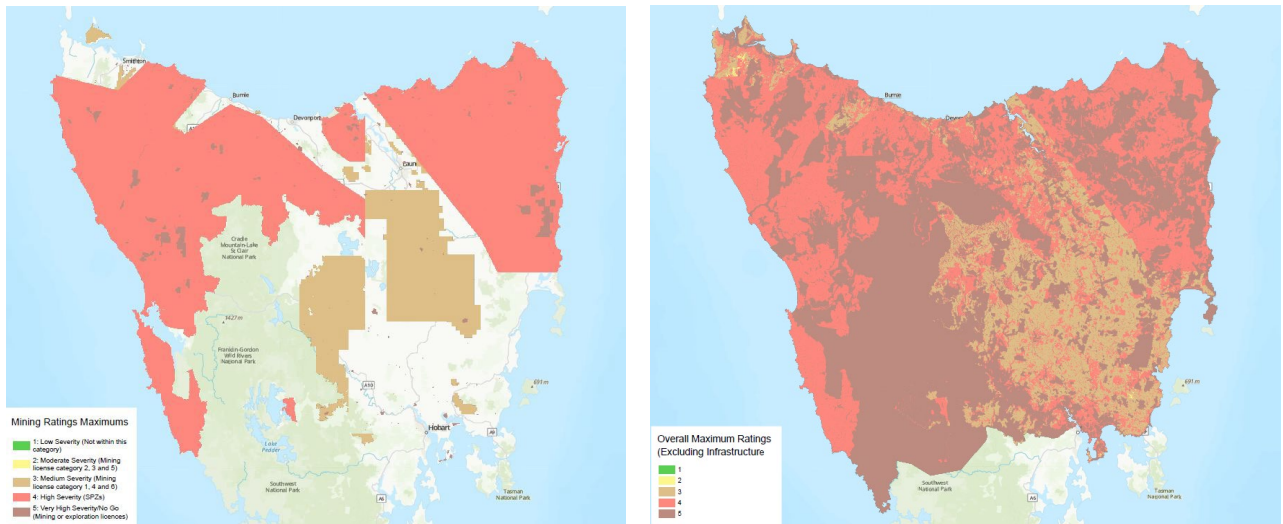


Figure 6: Mining constraints with SPZ (Left) and resultant Max combined constraint model

A sensitivity analysis was subsequently undertaken using alternative data, instead of SPZ, supplied by the mining policy unit, outlined as follows:

- Specified prospectivity (derived from known prospectivity within the SPZ with consideration of known key metals and mineral deposits). This layer was used as an alternative to the SPZ.
- Specified prospectivity delineated by land tenure type (Crown vs private).

The mining policy unit rated the new data set (in accordance with Section 2.3). The outcome of this analysis was that additional land was available for further investigation of candidate areas (refer Figure 7 and 8).

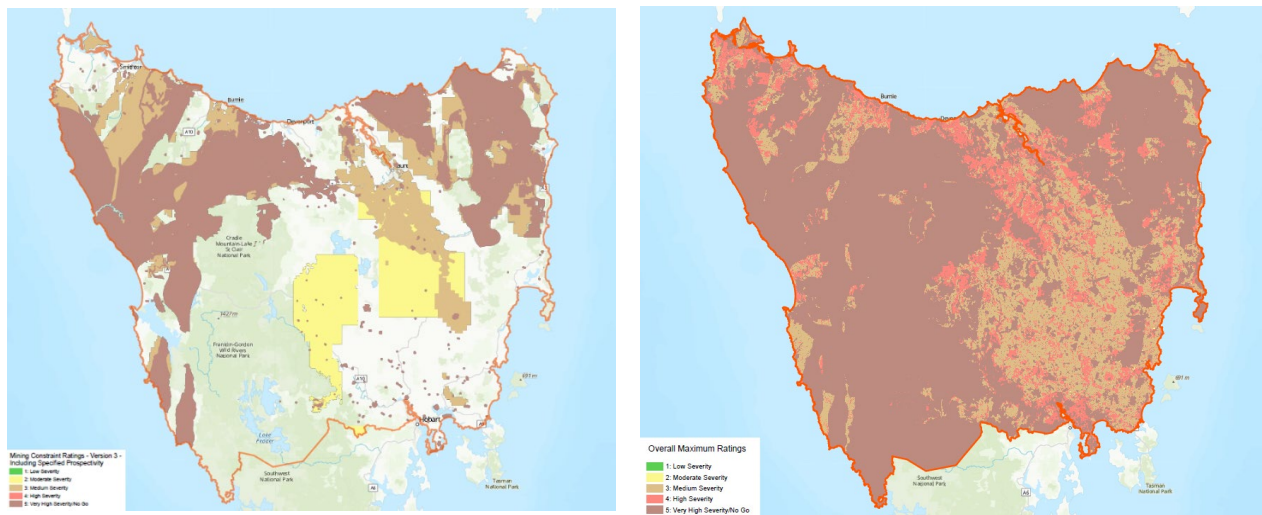


Figure 7: Specified Prospectivity [no SPZ] (Left) and resultant Max combined constraint model

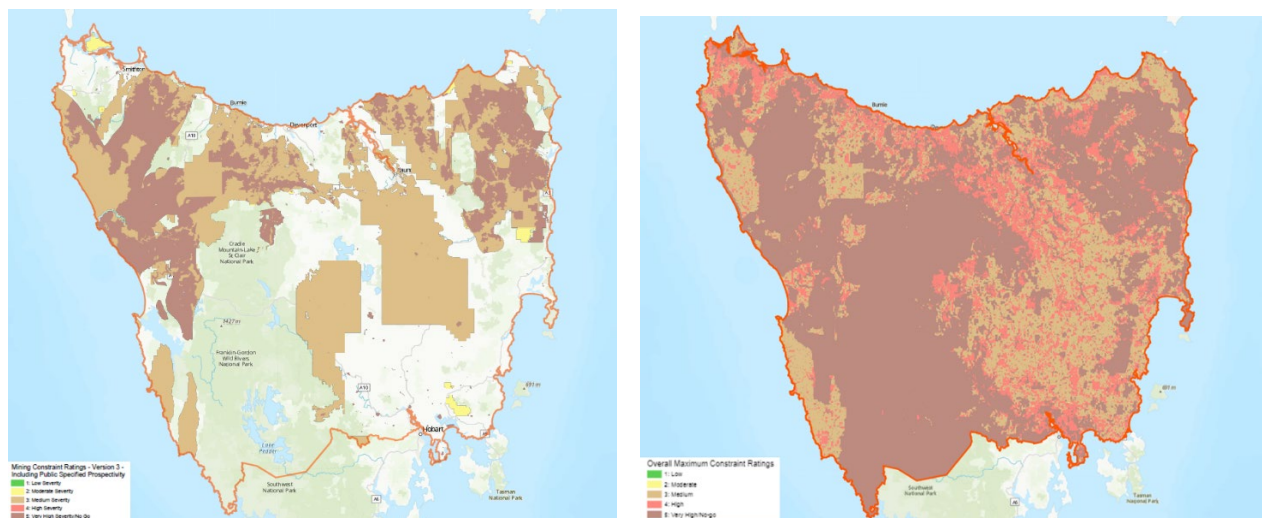


Figure 8: Specified Prospectivity [no SPZ] on Public Land (Left) and resultant Max combined constraint model

As a result of the sensitivity analysis, the specified prospectivity (delineated by land tenure) constraint layer was adopted for input to the final MAX/MEAN constraint model used for candidate area identification (shown in Figure 5).

The confirmed and final model constraint rating maps for each category are shown in Appendix D: Rating maps. The final MAX and MAX/MEAN constraint model output maps, respectively, are shown in Appendix E: Model outputs.

2.6 Candidate area identification

The candidate areas were identified by aligning the areas of high wind resource with the areas of least constraint as identified by the MAX/MEAN model.

2.6.1 Hexagon (Tessellation) Analytics

Hexagon analytics is used in natural resource modelling covering a wide area due to their regular shape and ability to “tile the plane”.

The base-case model was aggregated into 1,000ha hexagons, each of which represented approximately 100MW of wind generation potential. Hexagons were filtered to show:

- Only those with optimum wind resource potential, classified as “Very good” (Global Wind Atlas 2022) was considered
- Only those with least modelled constraint (mean aggregate model rating of 2.75 or less)

Tasmania has an overall high quality wind resource, consultation with industry and technical input from Aurecon specialists indicated that “Very Good” as defined by the Global Wind Atlas, was the most appropriate areas of resource to analyse. The hexagons were then filtered to only represent areas with very good resource, this was further filtered against the final MAX/MEAN constraint model (refer Figure 9).

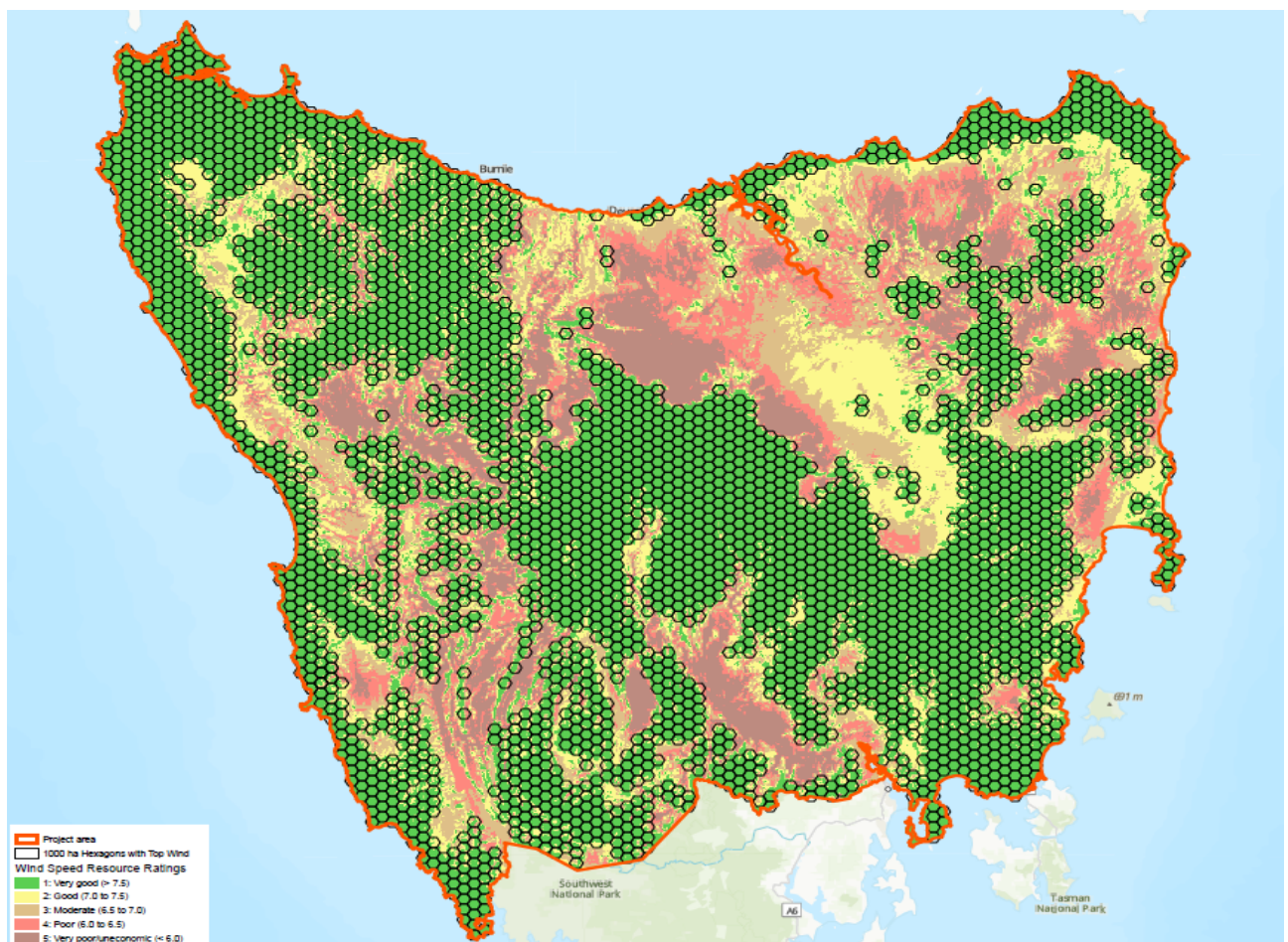


Figure 9: Wind Speed Resource Ratings with Very Good Wind hexagons

The MAX/MEAN constraint model was aggregated into the wind hexagons using the Spatial Analyst *Zonal Statistics* tool: this provides, for each hexagon, a complete statistical profile of the constraint model.

The **mean** value for each wind hexagon was assessed and, if the mean value was below a 2.75 risk rating threshold, that hexagon was highlighted as a candidate. As per the constraint ratings (Table 2), these areas would be most developable, having moderate to medium constraints to the siting of a proposed facility. These low value threshold hexagons are shown in Figure 10.

2.6.2 Candidate area validation

The validation for the candidate areas was undertaken using the Neighbourhood Focal Statistics tool. For this tool, a footprint shape is defined: in this case a circular shape with area 1000ha was chosen, as in raster representation this most closely resembles the hexagons used above. This tool works by placing the footprint at every cell within the study area and assessing the area covered: think of a fisherman stepping from cell to cell and casting a 1000ha net to see what they've caught. This process gives a much more fine-grained output, as shown in Figure 12 below. The defined candidate area outlines are included for reference.

This output uses an alternative methodology to check and validate that the outputs from the hexagon tessellation analytics do show favourable areas (dark blue). It confirms that the hexagon analytics are in fact correct and do not omit any potential candidate areas. Note, this process does not confine itself to the identified wind hexagons, hence the depiction of other favourable zones (dark blue) not picked up in the hexagon analytics. However, what it does show is direct correlation and validation of the identified candidate areas.

2.7 Analysis of the Candidate areas

The Spatial Analysis process (SSAT©) identified candidate areas ranging in size from 5,000 to 450,000 hectares. These areas are nominally located in North-west, Central and North-east Tasmania, as shown in Figure 13 (refer to Appendix F for candidate area rating maps). Detailed statistics and characteristics for each candidate area was generated, summarised as follows:

- Detailed summary results of the candidate areas (Appendix G)
 - Mean rating
 - Total area (ha)
 - Developable area (ha)
 - Nominal generation capacity (MW)
 - Number of land parcel contained within candidate area
 - Area of Crown land (ha) and Crown land % of candidate area
 - Area of Private Freehold (ha) and Private Freehold % of candidate area
- Histograms assessing the candidate areas in terms of the impacts (1-5) on each category (Appendix H)
- A map per candidate area showing the candidate area superimposed on the MAX model per category (Appendix I)
- A proximity analysis undertaken on the candidate areas with secondary datasets (Appendix J)

3 Conclusion

The SSAT© modelling process provided a rigorous and robust set of outcomes. A technical working group have been consulted, and 382 individual spatial features from 62 spatial data layers have been used in the modelling to support the analytics.

The result is the SSAT© process yielded candidate areas ranging in size from 5,000 to 450,000 hectares with candidates primarily located in the North-west, Central and North-east regions of Tasmania. Combined, these candidate areas total 712,000ha of land with 600,000ha private land (84%) and 112,000ha Crown Land (16%) and a potential generating capacity of approximately 72GW.

Appendix A: Modelling assumptions and limitations

Detailed spatial modelling of large areas can become extremely complex and involve numerous inputs – both spatial and non-spatial. It is not feasible to model every conceivable input, and careful consideration needs to be given to the selection of input layers.

The following basic assumptions are made when setting up a spatially based MCA model such as SSAT@:

- The assessment is a desktop study and the outputs are entirely dependent on the quality and availability of spatial layers identified for input.
- Outputs provide at best a high-level indication of areas where potential for wind energy generation exists. Further detailed investigations, including field verification and negotiations with potentially affected landowners would be required before any development took place.
- Spatial datasets should be freely available from reputable sources and conform to basic data quality standards in terms of:
 - Currency
 - Spatial accuracy/topological integrity
 - Completeness
 - Validity
 - Descriptive attribute data
 - Metadata describing the layer's source, lineage, attribution and usage restrictions.
- Datasets are freely available for download from open data sources or the TWG. Web-based datasets cannot be used as the modelling processes require access to the source data.
- Modelling is performed on a raster grid representation of the constraint layers. The grid cell size chosen for the model should be carefully chosen with the following in mind:
 - The size of the study area: very small cell sizes (eg 5m or less) in a large study area can result in huge datasets which are slow to process and unwieldy to manipulate.
 - The size of features to be modelled. The grid cell size represents the minimum size of features to be included, so a large cell size (eg 50-200m) can artificially exaggerate the size of smaller features. This is particularly relevant for point and line features: these need to be buffered by at least half the cell size to facilitate representation by at least one grid cell. For example, for a model resolution of 25m:
 - a point layer of raptor nests will be represented at a minimum as a 25 x 25m grid cell.
 - a road 5m wide will be represented by a line of grid cells 25m wide.
 - Some features (point, line or polygon) may require additional buffering to indicate exclusion areas or separation distances. In the above example, raptor nests may be buffered by 500m to represent their exclusion area. Buffer sizes themselves should be whole multiples of the grid cell size: in our example, a 500m buffer is 20 grid cells (20 x 25 = 500).
- Only layers that would likely have a critical influence on the target solution and risk assessment should be included directly in the model. Model complexity rises steeply as the number of datasets increases, affecting processing times and the interpretation of the results. The intention of the modelling process is not to model every factor present to the *n*th degree.
- Target generation capacity has been based on an indicative yield of 100kW per hectare, requiring 10ha per megawatt of wind power generated. This figure has been provided as a useful indicative measure by Aurecon's wind energy SMEs.

Appendix B: Datasets used

No.	GIS dataset name	LIST OpenData or source
1	clum_TAS_25m	clum_TAS_25m
2	Enwave_Gas_Declared_Pipeline_Corridor_statewide	Enwave Gas Declared Pipeline Corridor
3	EPA_PREMISES_SITES_PUBLIC_LIST	EPA_PREMISES_SITES_PUBLIC_LIST
4	exploration licence	exploration licence
5	Floodplain_LIST_1_250K_	Floodplain_LIST_1_250K_
6	Gas_Pipeline_Planning_Corridor_statewide	Gas Pipeline Planning Corridor
7	Geoconservation_Sites_Listed_Outlines_	Geoconservation_Sites_Listed_Outlines_
8	interim_planning_scheme_overlay_statewide	Interim Planning Scheme - Overlays
9	interim_planning_scheme_zoning_statewide	Interim Planning Scheme - Zoning
10	list_cfev_karst_statewide	LIST CFEV Karst - Integrated Conservation Value
11	list_coastal_acid_sulfate_soils_statewide	LIST Coastal Acid Sulfate Soils
12	list_hydarea	LIST Hydrographic Areas
13	list_hydlne	LIST Hydrographic Points
14	list_inland_acid_sulfate_soils_statewide	LIST Inland Acid Sulfate Soils
15	list_irrigation_tasmania_dams_statewide	Tasmanian Irrigation Dam
16	list_irrigation_tasmania_pipeline_statewide	Tasmanian Irrigation Pipeline
17	list_land	NCH Land Capability
18	list_land_tenure_statewide	LIST Land Tenure
19	list_local_govt_reserves_statewide	LIST Local Government Reserves
20	list_private_reserves_statewide	LIST Private Reserves (consists of conservation covenants, private sanctuaries, etc)
21	list_private_timber_reserves_statewide	Private Timber Reserves
22	list_public_land_class	LIST Public Land Classification
23	list Ramsar wetlands statewide	LIST Ramsar Wetlands
24	list_tasmanian_reserve_estate_statewide	list_tasmanian_reserve_estate_statewide
25	list_tasveg_30	NCH Tasveg 3.0
26	list_threatened_native_vegetation_communities_statewide	NCH Threatened Native Vegetation Communities 2020
27	list_transport_segments	LIST Transport Segments
28	Mineral Occurrence Points of Tasmania	Mineral Occurrence Points of Tasmania
29	Mining Lease	Mining Lease
30	Mining License Category 1	Category 1 Exploration Licence
31	Mining License Category 2	Category 2 Exploration Licence
32	Mining License Category 3	Category 3 Exploration Licence
33	Mining License Category 4	Category 4 Exploration Licence
34	Mining License Category 5	Category 5 Exploration Licence
35	Mining License Category 6	Category 6 Exploration Licence
36	mining_State	mining_State
37	national_heritage_public	LIST Heritage Register
38	NCH LANDFORM CLASSIFICATION	NCH Landform Classification
39	Parcel_size	LIST Cadastral Parcels
40	Prohibited Areas	Prohibited Areas
41	Public Flood Inundation Extent Models statewide	Public Flood Inundation Extent Models
42	Raptor_Nests	Raptor_Nests
43	Ridge landform parallel to prevailing wind direction (W)	Ridge landform parallel to prevailing wind direction (W)
44	Ridge landform perpendicular to prevailing wind direction (W)	Ridge landform perpendicular to prevailing wind direction (W)
45	Ridge landform with prevailing wind direction at an angle	Ridge landform with prevailing wind direction at an angle
46	Road access	Road access
47	Road proximity	Road proximity
48	Slope aspect	Slope aspect

49	Slope class	Slope class
50	solar_PVout_yr	solar_PVout_yr
51	Tasmanian Irrigation_Irrigation district	Tasmanian Irrigation Irrigation District
52	Tasmanian_Irrigation_Transmission_Line	Tasmanian Irrigation Transmission Line
53	Tasmanian_Planning_Scheme_Code_Overlay_statewide	Tasmanian Planning Scheme - Code Overlay
54	Tasmanian_Planning_Scheme_General_Overlay_statewide	Tasmanian Planning Scheme - General Overlay
55	Tasmanian_Planning_Scheme_Zones_statewide	Tasmanian Planning Scheme - Zones
56	TasmanianHeritageRegister_Polygons	TasmanianHeritageRegister_Polygons
57	Threatened_Fauna	Threatened_Fauna
58	Threatened_Flora	Threatened_Flora
59	Transmission line proximity	Transmission line proximity
60	Wind speed	Wind speed
61	world_heritage_public	world_heritage_public
62	Specified Prospectivity	Mining Policy Unit

Appendix C: Rating table

The Rating table shown below represents the final constraint layers included in the model, with their final ratings as agreed by the TWG.

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
1	Forestry	Forest Policy/Agriculture Policy	Reserve estates	RES_CLASS	Future Potential Production Forest	3
2	Forestry	Forest Policy/Agriculture Policy	Reserve estates	RES_CLASS	Informal Reserve on Permanent Timber Production Zone Land or STT managed land	3
3	Forestry	Forest Policy/Agriculture Policy	Public land	CATEGORY	Permanent Timber Production Zone Land	5
4	Forestry	Forest Policy/Agriculture Policy	Reserves_Private timber	All	private timber reserves	3
5	Heritage	Heritage	Indigenous heritage	CLASS	Western Tasmania Aboriginal Cultural Landscape	5
6	Heritage	Heritage	European heritage	All	European heritage	4
7	Mining	Mining	Mining_Exp_1	TENEMENTTY	Mining Cat 1 Special Exploration Licence	3
8	Mining	Mining	Mining_Exp_1	TENEMENTTY	Mining Cat 1 Exploration Licence	3
9	Mining	Mining	Mining_Exp_2	TENEMENTTY	Mining Cat 2 Exploration Licence	2
10	Mining	Mining	Mining_Exp_3	TENEMENTTY	Mining Cat 3 Exploration Licence	2
11	Mining	Mining	Mining_Exp_4	TENEMENTTY	Mining Cat 4 Exploration Licence	3
12	Mining	Mining	Mining_Exp_5	TENEMENTTY	Mining Cat 5 Exploration Licence	2
13	Mining	Mining	Mining_Exp_6	TENEMENTTY	Mining Cat 6 Exploration Licence	3
14	Mining	Mining	Retention_Licence	TENEMENTTY	Mining Retention Licence	5
15	Mining	Mining	Mining Lease	TENEMENTTY	Mining Lease	5
16	Mining	Mining	mineral_occurence	COMM_TYPE	Metals	4
17	Mining	Mining	mining_State	Coding	Within SPZ - Crown Land	5
18	Mining	Mining	mining_State	Coding	Outside SPZ	3
19	Mining	Mining	mining_State	Coding	Within SPZ - private	3
20	Natural Values	Natural Values	Reserve estates	RES_CLASS	Private Nature Reserve and Conservation Covenant (NCA)	5

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
21	Natural Values	Natural Values	Reserve estates	RES_CLASS	Private Sanctuary and Conservation Covenant (NCA)	4
22	Natural Values	Natural Values	Tasveg	VEG_GROUP	Wet eucalypt forest and woodland	3
23	Natural Values	Natural Values	Tasveg	VEG_GROUP	Dry eucalypt forest and woodland	3
24	Natural Values	Natural Values	Tasveg	VEG_GROUP	Agricultural, urban and exotic vegetation	1
25	Natural Values	Natural Values	Tasveg	VEG_GROUP	Other natural environments	1
26	Natural Values	Natural Values	Tasveg	VEG_GROUP	Rainforest and related scrub	3
27	Natural Values	Natural Values	Tasveg	VEG_GROUP	Scrub, heathland and coastal complexes	3
28	Natural Values	Natural Values	Tasveg	VEG_GROUP	Non eucalypt forest and woodland	3
29	Natural Values	Natural Values	Tasveg	VEG_GROUP	Native grassland	3
30	Natural Values	Natural Values	Tasveg	VEG_GROUP	Moorland, sedgeland, rushland and peatland	3
31	Natural Values	Natural Values	Tasveg	VEG_GROUP	Highland and treeless vegetation	3
32	Natural Values	Natural Values	Tasveg	VEG_GROUP	Saltmarsh and wetland	4
33	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Alkaline pans	4
34	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Allocasuarina littoralis forest	4
35	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Athrotaxis cupressoides open woodland	4
36	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Athrotaxis cupressoides rainforest	4
37	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Athrotaxis cupressoides/Nothofagus gunnii short rainforest	4
38	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Athrotaxis selaginoides rainforest	4
39	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Athrotaxis selaginoides subalpine scrub	4
40	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Athrotaxis selaginoides/Nothofagus gunnii short rainforest	4
41	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Banksia marginata wet scrub	4
42	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Banksia serrata woodland	4
43	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Callitris rhomboidea forest	4
44	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Cushion moorland	4
45	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Eucalyptus amygdalina forest and woodland on sandstone	4
46	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Eucalyptus amygdalina inland forest and woodland on cainozoic deposits	4
47	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Eucalyptus brookeriana wet forest	4
48	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Eucalyptus globulus dry forest and woodland	4

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
49	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Eucalyptus morrisbyi forest and woodland	4
50	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Eucalyptus ovata forest and woodland	4
51	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Eucalyptus risdonii forest and woodland	4
52	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Eucalyptus tenuiramis forest and woodland on sediments	4
53	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Eucalyptus viminalis - Eucalyptus globulus coastal forest and woodland	4
54	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Eucalyptus viminalis wet forest	4
55	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Heathland on calcareous substrates	4
56	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Highland grassy sedgeland	4
57	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Highland Poa grassland	4
58	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Melaleuca ericifolia swamp forest	4
59	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Melaleuca pustulata scrub	4
60	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Notelaea - Pomaderris - Beyeria forest	4
61	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Rainforest fernland	4
62	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Riparian scrub	4
63	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Seabird rookery complex	4
64	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Sphagnum peatland	4
65	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Spray zone coastal complex	4
66	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Subalpine Diplarrena latifolia rushland	4
67	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Subalpine Leptospermum nitidum woodland	4
68	Natural Values	Natural Values	Veg_Threatened	SCHED_NAME	Wetlands	4
69	Natural Values	Natural Values	Fauna_Threatened	STATE_SCHEDULE_DESC	endangered	3
70	Natural Values	Natural Values	Fauna_Threatened	STATE_SCHEDULE_DESC	endangered (unofficial)	3
71	Natural Values	Natural Values	Fauna_Threatened	STATE_SCHEDULE_DESC	extinct	3
72	Natural Values	Natural Values	Fauna_Threatened	STATE_SCHEDULE_DESC	extinct (unofficial)	3
73	Natural Values	Natural Values	Fauna_Threatened	STATE_SCHEDULE_DESC	listing as endangered pending (unofficial)	3
74	Natural Values	Natural Values	Fauna_Threatened	STATE_SCHEDULE_DESC	rare	3
75	Natural Values	Natural Values	Fauna_Threatened	STATE_SCHEDULE_DESC	rare (unofficial)	3
76	Natural Values	Natural Values	Fauna_Threatened	STATE_SCHEDULE_DESC	vulnerable	3
77	Natural Values	Natural Values	Fauna_Threatened	STATE_SCHEDULE_DESC	vulnerable (unofficial)	3
78	Natural Values	Natural Values	Fauna_Threatened	STATE_SCHEDULE_DESC	vulnerable, uplisting to endangered pending	3

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
79	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	endangered	3
80	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	endangered (unofficial)	3
81	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	hybrid or intergrade of a threatened species (unofficial)	3
82	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	listing as endangered pending (unofficial)	3
83	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	listing as endangered under consideration (unofficial)	3
84	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	listing as rare under consideration (unofficial)	3
85	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	parent species (unofficial)	3
86	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	rare	3
87	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	rare (unofficial)	3
88	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	vulnerable	3
89	Natural Values	Natural Values	Flora_Threatened	STATE_SCHEDULE_DESC	vulnerable (unofficial)	3
90	Geology and Soils	Natural Values	Geoconservation sites	LISTING_STATUS	Listed	3
91	Natural Values	Natural Values	Reserves_Private	CATEGORY	Conservation Covenant	4
92	Natural Values	Natural Values	Reserves_Private	CATEGORY	Conservation Covenant - Domestic	4
93	Natural Values	Natural Values	Reserves_Private	CATEGORY	Conservation Covenant - Miscellaneous	4
94	Natural Values	Natural Values	Reserves_local	CATEGORY	Public Open Space	4
95	Natural Values	Natural Values	Raptor_buf500	Coding	Raptor nest buffer 500m	5
96	Parks	Parks	Reserve estates	RES_CLASS	Regional Reserve	3
97	Parks	Parks	Reserve estates	RES_CLASS	Informal Reserve on other public land	2
98	Parks	Parks	Reserve estates	RES_CLASS	Public authority land within WHA	5
99	Parks	Parks	Reserve estates	RES_CLASS	Wellington Park	5
100	Parks	Parks	Reserve estates	RES_CLASS	Indigenous Protected Area	3
101	Parks	Parks	Ramsar wetlands	CATEGORY	Ramsar Wetland	5
102	Parks	Parks	WHA	NAME	Tasmanian Wilderness WHA	5
103	Parks	Parks	Public land	CATEGORY	Conservation Area	3
104	Parks	Parks	Public land	CATEGORY	Public Reserve	2
105	Parks	Parks	Public land	CATEGORY	State Reserve	5
106	Parks	Parks	Public land	CATEGORY	Regional Reserve	3
107	Parks	Parks	Public land	CATEGORY	National Park	5
108	Parks	Parks	Public land	CATEGORY	Nature Recreation Area	5
109	Parks	Parks	Public land	CATEGORY	Nature Reserve	5
110	Parks	Parks	Public land	CATEGORY	Historic Site	5

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
111	Parks	Parks	Public land	CATEGORY	Game Reserve	5
112	Parks	Parks	Reserves_Private	CATEGORY	Private Sanctuary	2
113	Parks	Parks	Reserves_Private	CATEGORY	Private Nature Reserve	2
114	Resource	ReCFIT	Wind speed	Value	> 7.5	1
115	Resource	ReCFIT	Wind speed	Value	7.0 to 7.5	2
116	Resource	ReCFIT	Wind speed	Value	6.5 to 7.0	3
117	Resource	ReCFIT	Wind speed	Value	6.0 to 6.5	4
118	Resource	ReCFIT	Wind speed	Value	< 6.0	5
119	Infrastructure	ReCFIT	Proximity_TX	Value	220kV only	1
120	Infrastructure	ReCFIT	Proximity_TX	Value	220kV only	2
121	Infrastructure	ReCFIT	Proximity_TX	Value	220kV only	3
122	Infrastructure	ReCFIT	Proximity_TX	Value	220kV only	4
123	Infrastructure	ReCFIT	Proximity_Road	Value	0-1km	1
124	Infrastructure	ReCFIT	Proximity_Road	Value	1-5km	2
125	Infrastructure	ReCFIT	Proximity_Road	Value	5-10km	3
126	Infrastructure	ReCFIT	Proximity_Road	Value	10-50km	4
127	Infrastructure	ReCFIT	Proximity_Road	Value	> 50km	5
128	Resource	ReCFIT	solar_PV	Value	<1400	4
129	Resource	ReCFIT	solar_PV	Value	1400 to 1500	3
130	Resource	ReCFIT	solar_PV	Value	1500 to 1600	2
131	Resource	ReCFIT	solar_PV	Value	>1600	1
132	N/A	ReCFIT	Slope	Value	< 1:10	1
133	N/A	ReCFIT	Slope	Value	1:10 to 1:8	2
134	N/A	ReCFIT	Slope	Value	1:8 to 1:6	3
135	N/A	ReCFIT	Slope	Value	1:6 to 1:3	4
136	N/A	ReCFIT	Slope	Value	> 1:3	5
137	Secondary	ReCFIT	Aspect	Value	Flat	1
138	Secondary	ReCFIT	Aspect	Value	N	3
139	Secondary	ReCFIT	Aspect	Value	NE	2
140	Secondary	ReCFIT	Aspect	Value	E	1
141	Secondary	ReCFIT	Aspect	Value	SE	2
142	Secondary	ReCFIT	Aspect	Value	S	3

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
143	Secondary	ReCFIT	Aspect	Value	SW	2
144	Secondary	ReCFIT	Aspect	Value	W	1
145	Secondary	ReCFIT	Aspect	Value	NW	2
146	Secondary	ReCFIT	Aspect	Value	N	3
147	Secondary	ReCFIT	Ridgelines	Value	Optimal wind resource scenario disregarding visual impact)	1
148	Secondary	ReCFIT	Ridgelines	Value	Would need to space turbines further apart, thus limiting capacity	3
149	Secondary	ReCFIT	Ridgelines	Value	Still good exposure, with some spacing limitations compared to perpendicular winds	2
150	Hydrology	ReCFIT	Flood extent models	FEATURECLASSNAME	Public Flood Inundation extent	5
151	Hydrology	ReCFIT	Floodplain_250k	FLD_PLN_TY	Floodplain_250k	5
152	Hydrology	ReCFIT	Waterbodies	HYDARTY1	Water Body	5
153	Hydrology	ReCFIT	Waterbodies	HYDARTY1	Wetland	5
154	Hydrology	ReCFIT	Waterbodies	HYDARTY1	Tidal zone	5
155	Hydrology	ReCFIT	Waterbodies	HYDARTY1	Estuary	5
156	Hydrology	ReCFIT	Waterbodies	HYDARTY1	Flood Plain	5
157	Hydrology	ReCFIT	Waterbodies	HYDARTY1	Watercourse	5
158	Hydrology	ReCFIT	Waterbodies	HYDARTY1	Dam	5
159	Hydrology	ReCFIT	Waterbodies	HYDARTY1	Flat	5
160	Hydrology	ReCFIT	Waterbodies	HYDARTY1	Artificial Watercourse	5
161	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Tidal Line	5
162	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Water Line	5
163	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Watercourse	5
164	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Hydrographic Connector	5
165	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Artificial Watercourse	5
166	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Water Fall	5
167	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Hydrographic Closure	5
168	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Hydro Line	5
169	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Dam	5
170	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Waterline and Connector	5
171	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Waterfall and Waterline	5

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
172	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Waterfall and Closure	5
173	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Dam and closure	5
174	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Tidal Line and Connector	5
175	Hydrology	ReCFIT	Watercourses	HYDLNTY1	Tidal Line and Closure	5
176	Terrain	ReCFIT	Karsts	KT_ICV	VH	4
177	Terrain	ReCFIT	Karsts	KT_ICV	H	3
178	Terrain	ReCFIT	Karsts	KT_ICV	M	3
179	Infrastructure	ReCFIT	Road access	Value	Principal road, sealed	1
180	Infrastructure	ReCFIT	Road access	Value	Minor road, unsealed	3
181	Infrastructure	ReCFIT	Road access	Value	Secondary road, sealed	1
182	Infrastructure	ReCFIT	Road access	Value	Minor road, sealed	2
183	Infrastructure	ReCFIT	Road access	Value	Principal road, unsealed	2
184	Infrastructure	ReCFIT	Road access	Value	Secondary road, unsealed	2
185	Terrain	ReCFIT	Landform	Value	Canyons, Deeply Incised Streams	4
186	Terrain	ReCFIT	Landform	Value	Midslope Drainages, Shallow Valleys	1
187	Terrain	ReCFIT	Landform	Value	Upland Drainages, Headwaters	2
188	Terrain	ReCFIT	Landform	Value	U-shape valleys	1
189	Terrain	ReCFIT	Landform	Value	Plains	1
190	Terrain	ReCFIT	Landform	Value	Open Slopes	1
191	Terrain	ReCFIT	Landform	Value	Upper Slopes	3
192	Terrain	ReCFIT	Landform	Value	Local Ridges/Hills in Valleys	1
193	Terrain	ReCFIT	Landform	Value	Midslope Ridges, Small Hills in Plains	1
194	Terrain	ReCFIT	Landform	Value	High Ridges, Mt Tops	3
195	Terrain	ReCFIT	Acid sulphate soils	ASS_PROBAB	High	4
196	Terrain	ReCFIT	Acid sulphate soils	ASS_PROBAB	Low	3
197	Terrain	ReCFIT	Acid sulphate soils	ASS_PROBAB	Extremely low	2
198	Terrain	ReCFIT	Acid sulphate soils	ASS_PROBAB	High	4
199	Terrain	ReCFIT	Acid sulphate soils	ASS_PROBAB	Low	3
200	Terrain	ReCFIT	Acid sulphate soils	ASS_PROBAB	Extremely low	2
201	Infrastructure	ReCFIT	Roads	TRAN_CLASS	National/State Highway	1
202	Infrastructure	ReCFIT	Roads	TRAN_CLASS	Arterial Road, sealed	1
203	Infrastructure	ReCFIT	Roads	TRAN_CLASS	Arterial Road, unsealed	1

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
204	Infrastructure	ReCFIT	Roads	TRAN_CLASS	Sub Arterial Road, sealed	1
205	Infrastructure	ReCFIT	Roads	TRAN_CLASS	Sub Arterial Road, unsealed	2
206	Infrastructure	ReCFIT	Roads	TRAN_CLASS	Collector Road, sealed	2
207	Infrastructure	ReCFIT	Roads	TRAN_CLASS	Collector Road, unsealed	3
208	Infrastructure	ReCFIT	Roads	TRAN_CLASS	Local Road, sealed	3
209	Infrastructure	ReCFIT	Roads	TRAN_CLASS	Local Road, unsealed	4
210	Infrastructure	ReCFIT	Roads	TRAN_CLASS	Access Road, sealed	4
211	Infrastructure	ReCFIT	Roads	TRAN_CLASS	Access Road, unsealed	4
212	Secondary	ReCFIT	Parcel_size	Area_ha	< 1	0
213	Secondary	ReCFIT	Parcel_size	Area_ha	1 to 10	0
214	Secondary	ReCFIT	Parcel_size	Area_ha	10 to 20	0
215	Secondary	ReCFIT	Parcel_size	Area_ha	20 to 50	0
216	Secondary	ReCFIT	Parcel_size	Area_ha	> 50	0
217	Planning	ReCFIT	Prohibited Areas	FEATURETYPE	Prohibited Area	5
218	Agriculture	ReCFIT	ALUM_agric	Value	Grazing native vegetation	2
219	Agriculture	ReCFIT	ALUM_agric	Value	Grazing modified pastures	3
220	Agriculture	ReCFIT	ALUM_agric	Value	Dryland cropping	3
221	Agriculture	ReCFIT	ALUM_agric	Value	Irrigated pastures	4
222	Agriculture	ReCFIT	ALUM_agric	Value	Irrigated cropping	4
223	Agriculture	ReCFIT	ALUM_agric	Value	Irrigated horticulture	4
224	Agriculture	State Planning	Land capability	CLASS	Land well suited to a wide range of intensive cropping and grazing activities with virtually no limitations to use	4
225	Agriculture	State Planning	Land capability	CLASS	At least 60% Land well suited to a wide range of intensive cropping and grazing activities with virtually no limitations to use, Up to 40% suited to a wide range of intensive cropping and grazing activities with slight limitations to use	4
226	Agriculture	State Planning	Land capability	CLASS	Land suited to a wide range of intensive cropping and grazing activities with slight limitations to use	4

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
227	Agriculture	State Planning	Land capability	CLASS	At least 60% Land suited to a wide range of intensive cropping and grazing activities with slight limitations to use, Up to 40% Land suited to a wide range of intensive cropping and grazing activities with slight limitations to use	4
228	Agriculture	State Planning	Land capability	CLASS	At least 60% Land suited to a wide range of intensive cropping and grazing activities with slight limitations to use, Up to 40% Land suited to cropping and intensive grazing with moderate limitations to use	4
229	Agriculture	State Planning	Land capability	CLASS	Land suited to cropping and intensive grazing with moderate limitations to use	4
230	Agriculture	State Planning	Land capability	CLASS	At least 60% Land suited to cropping and intensive grazing with moderate limitations to use, Up to 40% Land suited to a wide range of intensive cropping and grazing activities with slight limitations to use	4
231	Agriculture	State Planning	Land capability	CLASS	At least 60% Land suited to cropping and intensive grazing with moderate limitations to use, up to 40% Land well suited to grazing but which is limited to occasional cropping or a very restricted range of crops	4
232	Agriculture	State Planning	Land capability	CLASS	Land well suited to grazing but which is limited to occasional cropping or a very restricted range of crops	2
233	Agriculture	State Planning	Land capability	CLASS	At least 60% Land well suited to grazing but which is limited to occasional cropping or a very restricted range of crops, up to 40% Land suited to cropping and intensive grazing with moderate limitations to use	2
234	Agriculture	State Planning	Land capability	CLASS	At least 60% Land well suited to grazing but which is limited to occasional cropping or a very restricted range of crops, up to 40% Land unsuited to cropping and with slight to moderate limitations to pastoral use	2
235	Agriculture	State Planning	Land capability	CLASS	Land unsuited to cropping and with slight to moderate limitations to pastoral use	2

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
236	Agriculture	State Planning	Land capability	CLASS	At least 60% Land unsuited to cropping and with slight to moderate limitations to pastoral use, up to 40% Land well suited to grazing but which is limited to occasional cropping or a very restricted range of crops	2
237	Agriculture	State Planning	Land capability	CLASS	At least 60% Land unsuited to cropping and with slight to moderate limitations to pastoral use, up to 40% Land well suited to grazing but which is limited to occasional cropping or a very restricted range of crops 56	2
238	Agriculture	State Planning	Land capability	CLASS	Land marginally suited to grazing due to severe limitations	2
239	Agriculture	State Planning	Land capability	CLASS	At least 60% Land marginally suited to grazing due to severe limitations, up to 40% Land unsuited to cropping and with slight to moderate limitations to pastoral use	2
240	Agriculture	State Planning	Land capability	CLASS	At least 60% Land marginally suited to grazing due to severe limitations, Up to 40% Land with very severe to extreme limitations that make it unsuitable for agricultural use	2
241	Agriculture	State Planning	Land capability	CLASS	Land with very severe to extreme limitations that make it unsuitable for agricultural use	1
242	Agriculture	State Planning	Land capability	CLASS	At least 60% Land with very severe to extreme limitations that make it unsuitable for agricultural use, up to 40% Land marginally suited to grazing due to severe limitations	1
243	Hydrology	State Planning	Irrigation dams	All	Irrigation dams	5
244	Hydrology	State Planning	Irrigation pipeline	All	Irrigation pipeline	5
245	Agriculture	State Planning	Irrigation transmission lines	All	Irrigation transmission lines	5
246	Secondary	State Planning	Irrigation district	All	Declared irrigation district	3
247	Planning	State Planning	EPA_PREMISES_SITES	ACTIVITY_CATEGORY	Extractive Industries	3
248	Planning	State Planning	EPA_PREMISES_SITES	ACTIVITY_CATEGORY	Contaminated Sites (Currently Regulated)	3
249	Planning	State Planning	TPS_Zones	ZONE	Agriculture	3
250	Planning	State Planning	TPS_Zones	ZONE	Central Business	5

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
251	Planning	State Planning	TPS_Zones	ZONE	Commercial	5
252	Planning	State Planning	TPS_Zones	ZONE	Community Purpose	5
253	Planning	State Planning	TPS_Zones	ZONE	Environmental Management	3
254	Planning	State Planning	TPS_Zones	ZONE	Future Urban	4
255	Planning	State Planning	TPS_Zones	ZONE	General Business	5
256	Planning	State Planning	TPS_Zones	ZONE	General Industrial	4
257	Planning	State Planning	TPS_Zones	ZONE	General Residential	5
258	Planning	State Planning	TPS_Zones	ZONE	Inner Residential	5
259	Planning	State Planning	TPS_Zones	ZONE	Landscape Conservation	4
260	Planning	State Planning	TPS_Zones	ZONE	Light Industrial	4
261	Planning	State Planning	TPS_Zones	ZONE	Local Business	5
262	Planning	State Planning	TPS_Zones	ZONE	Low Density Residential	5
263	Planning	State Planning	TPS_Zones	ZONE	Major Tourism	4
264	Planning	State Planning	TPS_Zones	ZONE	Open Space	4
265	Planning	State Planning	TPS_Zones	ZONE	Particular Purpose	5
266	Planning	State Planning	TPS_Zones	ZONE	Port and Marine	4
267	Planning	State Planning	TPS_Zones	ZONE	Recreation	4
268	Planning	State Planning	TPS_Zones	ZONE	Rural	2
269	Planning	State Planning	TPS_Zones	ZONE	Rural Living	5
270	Planning	State Planning	TPS_Zones	ZONE	Urban Mixed Use	5
271	Planning	State Planning	TPS_Zones	ZONE	Utilities	3
272	Planning	State Planning	TPS_Zones	ZONE	Village	5
273	Planning	State Planning	TPS_Code	CODE	Bushfire-prone Areas Code	2
274	Planning	State Planning	TPS_Code	CODE	Coastal Erosion Hazard Code	3
275	Planning	State Planning	TPS_Code	CODE	Coastal Inundation Hazard Code	3
276	Planning	State Planning	TPS_Code	CODE	Electricity Transmission Infrastructure Protection Code	5
277	Planning	State Planning	TPS_Code	CODE	Flood-prone Hazard Areas Code	4
278	Planning	State Planning	TPS_Code	CODE	Landslip Hazard Code	3
279	Planning	State Planning	TPS_Code	CODE	Local Historical Heritage Code	4
280	Planning	State Planning	TPS_Code	CODE	Natural Assets Code	4
281	Planning	State Planning	TPS_Code	CODE	Potentially Contaminated Land Code	3
282	Planning	State Planning	TPS_Code	CODE	Safeguarding of Airports Code	4

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
283	Planning	State Planning	TPS_Code	CODE	Scenic Protection Code	4
284	Planning	State Planning	TPS_General	OV_TYPE	Specific Area Plan	5
285	Planning	State Planning	Planning zones_interim	ZONE	10.0 General Residential	5
286	Planning	State Planning	Planning zones_interim	ZONE	11.0 Inner Residential	5
287	Planning	State Planning	Planning zones_interim	ZONE	12.0 Low Density Residential	5
288	Planning	State Planning	Planning zones_interim	ZONE	13.0 Rural Living	5
289	Planning	State Planning	Planning zones_interim	ZONE	14.0 Environmental Living	5
290	Planning	State Planning	Planning zones_interim	ZONE	15.0 Urban Mixed Use	5
291	Planning	State Planning	Planning zones_interim	ZONE	16.0 Village	5
292	Planning	State Planning	Planning zones_interim	ZONE	17.0 Community Purpose	5
293	Planning	State Planning	Planning zones_interim	ZONE	18.0 Recreation	4
294	Planning	State Planning	Planning zones_interim	ZONE	19.0 Open Space	4
295	Planning	State Planning	Planning zones_interim	ZONE	20.0 Local Business	5
296	Planning	State Planning	Planning zones_interim	ZONE	21.0 General Business	5
297	Planning	State Planning	Planning zones_interim	ZONE	22.0 Central Business	5
298	Planning	State Planning	Planning zones_interim	ZONE	23.0 Commercial	5
299	Planning	State Planning	Planning zones_interim	ZONE	24.0 Light Industrial	4
300	Planning	State Planning	Planning zones_interim	ZONE	25.0 General Industrial	4
301	Planning	State Planning	Planning zones_interim	ZONE	26.0 Rural Resource	3
302	Planning	State Planning	Planning zones_interim	ZONE	27.0 Significant Agricultural	3
303	Planning	State Planning	Planning zones_interim	ZONE	28.0 Utilities	3
304	Planning	State Planning	Planning zones_interim	ZONE	29.0 Environmental Management	3
305	Planning	State Planning	Planning zones_interim	ZONE	30.0 Major Tourism	4
306	Planning	State Planning	Planning zones_interim	ZONE	31.0 Port and Marine	4
307	Planning	State Planning	Planning zones_interim	ZONE	32.0 Particular Purpose	5
308	Planning	State Planning	Planning zones_interim	ZONE	33.0 Particular Purpose	5
309	Planning	State Planning	Planning zones_interim	ZONE	34.0 Particular Purpose	5
310	Planning	State Planning	Planning zones_interim	ZONE	35.0 Particular Purpose	5
311	Planning	State Planning	Planning zones_interim	ZONE	36.0 Particular Purpose	5
312	Planning	State Planning	Planning zones_interim	ZONE	37.0 Particular Purpose	5
313	Planning	State Planning	Planning zones_interim	ZONE	38.0 Particular Purpose	5
314	Planning	State Planning	Planning zones_interim	ZONE	39.0 Particular Purpose	5

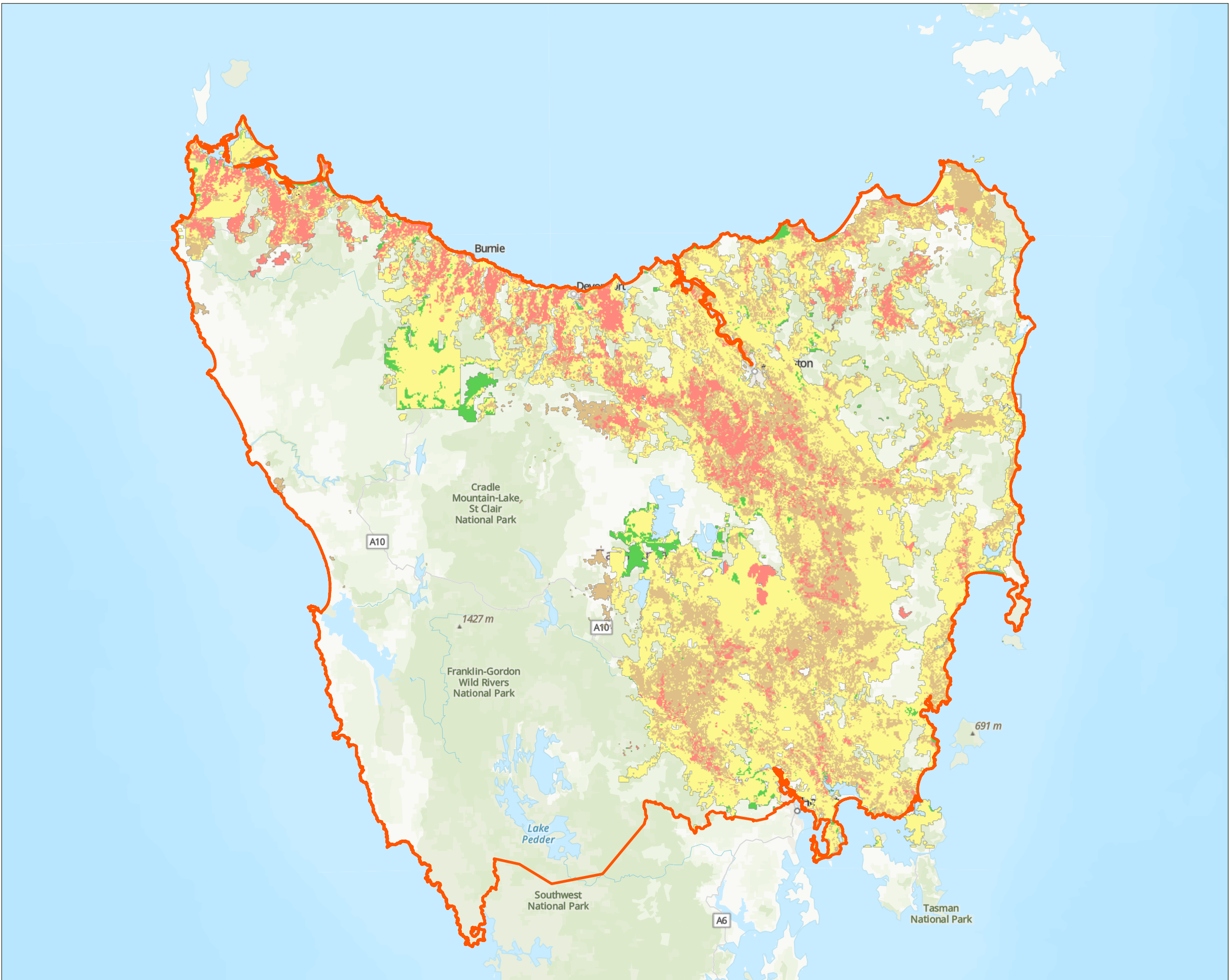
No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
315	Planning	State Planning	Planning zones_interim	ZONE	40.0 Particular Purpose	5
316	Planning	State Planning	Planning zones_interim	ZONE	41.0 Particular Purpose	5
317	Planning	State Planning	Planning overlays_interim	O_NAME	Bell Bay Proclaimed Wharf Area	4
318	Planning	State Planning	Planning overlays_interim	O_NAME	Biodiversity Protection Area	4
319	Planning	State Planning	Planning overlays_interim	O_NAME	Bushfire Prone Areas	2
320	Planning	State Planning	Planning overlays_interim	O_NAME	Coastal Erosion Hazard Area	3
321	Planning	State Planning	Planning overlays_interim	O_NAME	Coastal Erosion Hazard Areas	3
322	Planning	State Planning	Planning overlays_interim	O_NAME	Coastal Inundation Hazard Area	3
323	Planning	State Planning	Planning overlays_interim	O_NAME	Electricity Transmission Infrastructure Protection	5
324	Planning	State Planning	Planning overlays_interim	O_NAME	Flood Prone Areas	3
325	Planning	State Planning	Planning overlays_interim	O_NAME	Flood Risk	3
326	Planning	State Planning	Planning overlays_interim	O_NAME	Flood Risk Area	3
327	Planning	State Planning	Planning overlays_interim	O_NAME	Future Road	3
328	Planning	State Planning	Planning overlays_interim	O_NAME	Heritage Area	4
329	Planning	State Planning	Planning overlays_interim	O_NAME	Heritage Places	3
330	Planning	State Planning	Planning overlays_interim	O_NAME	Heritage Precinct	5
331	Planning	State Planning	Planning overlays_interim	O_NAME	Heritage Precincts	5
332	Planning	State Planning	Planning overlays_interim	O_NAME	Historic Heritage	4
333	Planning	State Planning	Planning overlays_interim	O_NAME	Landslide Hazard Area	3
334	Planning	State Planning	Planning overlays_interim	O_NAME	Landslip Hazard	3
335	Planning	State Planning	Planning overlays_interim	O_NAME	Latrobe Conservation Area	4
336	Planning	State Planning	Planning overlays_interim	O_NAME	Obstacle Limitation Surfaces Area	4
337	Planning	State Planning	Planning overlays_interim	O_NAME	Operational Airspace	4
338	Planning	State Planning	Planning overlays_interim	O_NAME	Priority Habitat	4
339	Planning	State Planning	Planning overlays_interim	O_NAME	Riverine Inundation Hazard Area	3
340	Planning	State Planning	Planning overlays_interim	O_NAME	Scenic Corridor	4
341	Planning	State Planning	Planning overlays_interim	O_NAME	Scenic Landscape	4
342	Planning	State Planning	Planning overlays_interim	O_NAME	Scenic Landscape Area	4
343	Planning	State Planning	Planning overlays_interim	O_NAME	Scenic Landscape Corridor	4
344	Planning	State Planning	Planning overlays_interim	O_NAME	Scenic Management Area	4
345	Planning	State Planning	Planning overlays_interim	O_NAME	Scenic Road	4
346	Planning	State Planning	Planning overlays_interim	O_NAME	Specific Area Plan	5

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
347	Planning	State Planning	Planning overlays_interim	O_NAME	University of Tasmania	4
348	Planning	State Planning	Planning overlays_interim	O_NAME	Urban Growth Boundary	5
349	Planning	State Planning	Planning overlays_interim	O_NAME	Waterway and Coastal Protection Area	4
350	Planning	State Planning	Planning overlays_interim	O_NAME	Waterway and Coastal Protection Areas	4
351	Planning	State Planning	Land tenure	TEN_CLASS	Authority Crown	3
352	Planning	State Planning	Land tenure	TEN_CLASS	Authority Freehold	3
353	Planning	State Planning	Land tenure	TEN_CLASS	Casement	3
354	Planning	State Planning	Land tenure	TEN_CLASS	Commonwealth	3
355	Planning	State Planning	Land tenure	TEN_CLASS	Conservation Area	-1
356	Planning	State Planning	Land tenure	TEN_CLASS	Conservation Covenant	4
357	Planning	State Planning	Land tenure	TEN_CLASS	Crown Land	1
358	Planning	State Planning	Land tenure	TEN_CLASS	Future Potential Production Forest (Crown)	-1
359	Planning	State Planning	Land tenure	TEN_CLASS	Future Potential Production Forest (HEC)	-1
360	Planning	State Planning	Land tenure	TEN_CLASS	Game Reserve	-1
361	Planning	State Planning	Land tenure	TEN_CLASS	HEC Conservation Area	4
362	Planning	State Planning	Land tenure	TEN_CLASS	Historic Site	-1
363	Planning	State Planning	Land tenure	TEN_CLASS	Hydro-Electric Corporation	3
364	Planning	State Planning	Land tenure	TEN_CLASS	Inland Water	-1
365	Planning	State Planning	Land tenure	TEN_CLASS	LGA Conservation Area	4
366	Planning	State Planning	Land tenure	TEN_CLASS	Local Government	3
367	Planning	State Planning	Land tenure	TEN_CLASS	Local Government Act Reserve	3
368	Planning	State Planning	Land tenure	TEN_CLASS	National Park	-1
369	Planning	State Planning	Land tenure	TEN_CLASS	Nature Recreation Area	-1
370	Planning	State Planning	Land tenure	TEN_CLASS	Nature Reserve	-1
371	Planning	State Planning	Land tenure	TEN_CLASS	Permanent Timber Production Zone Land	-1
372	Planning	State Planning	Land tenure	TEN_CLASS	Private Freehold	1
373	Planning	State Planning	Land tenure	TEN_CLASS	Private Nature Reserve	4
374	Planning	State Planning	Land tenure	TEN_CLASS	Private Sanctuary	4
375	Planning	State Planning	Land tenure	TEN_CLASS	Public Reserve	-1
376	Planning	State Planning	Land tenure	TEN_CLASS	Regional Reserve	-1
377	Planning	State Planning	Land tenure	TEN_CLASS	State Reserve	3
378	Planning	State Planning	Land tenure	TEN_CLASS	Tas Irrigation	3

No.	Category	TWG	Short name	Key attribute	Attribute value	Rating
379	Planning	State Planning	Land tenure	TEN_CLASS	Tas Water	5
380	Planning	State Planning	Land tenure	TEN_CLASS	Wellington Park	-1
381	Infrastructure	State Planning	Gas_corridor	FEATURE_ID	Declared Pipeline Corridor	4
382	Infrastructure	State Planning	Gas_corridor	GEODB_OID	Gas_corridor	4

Appendix D: Rating maps

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping\Map3.aprx 16/12/2022 15:09



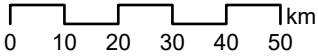
Legend

- Project area
- Agriculture Constraint Ratings**
- 1: Low (Land not suitable for agriculture)
 - 2: Moderate (Land unsuitable for cropping but suitable for grazing)
 - 3: Medium (Dryland cropping)
 - 4: High (Land irrigated or suitable for cropping)
 - 5: Very High/No-go (Irrigation transmission lines)

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

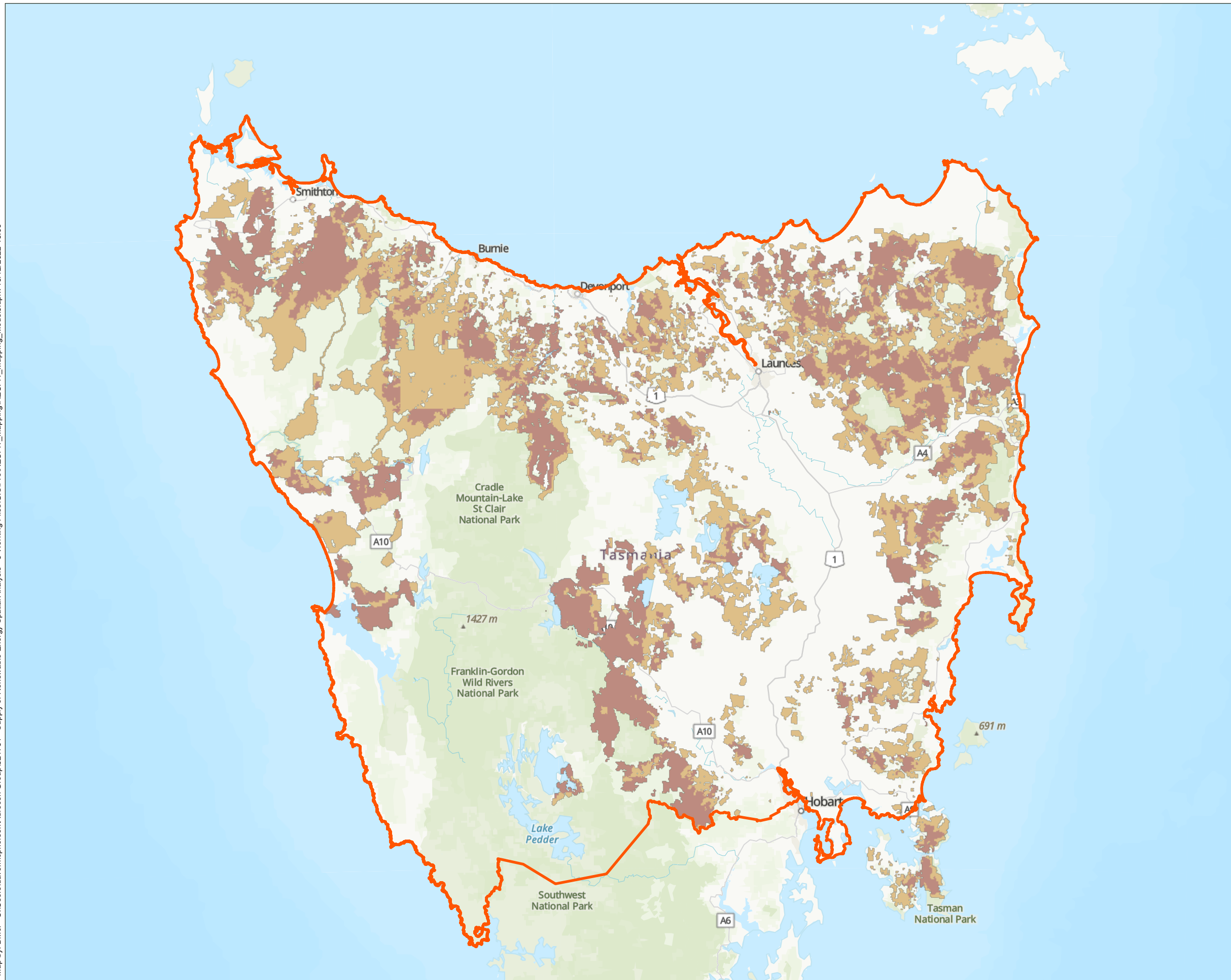
Data Inputs:
The maximum Ratings of each of the following layers:
- CLUM TAS
- List Land Capability
- Tasmanian Irrigation Transmission Lines

Date: 15/12/2022 Version: 5



Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping_Model3.aprx 16/12/2022 15:09



Legend

- Project area
- Forestry Constraint Ratings**
- 1: Low (Not within this category)
 - 2: Moderate (Not within this category)
 - 3: Medium (Future Potential Production Forest/ Informal Reserve on Permanent Timber Production Zone)
 - 4: High (Not within this category)
 - 5: Very High/No-go (Permanent Timber Production Zone Land)

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data Inputs:
The maximum Ratings of each of the following layers:
- Tasmanian Reserve Estates
- Public Land Class (Forestry)
- Private Timber Reserves

Date: 15/12/2022

Version: 5



0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

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Legend

- Project area
- Heritage Constraint Ratings**
- 1: Low (Not within this category)
 - 2: Moderate (Not within this category)
 - 3: Medium (Not within this category)
 - 4: High (European Heritage)
 - 5: Very High/No-go (Western Tasmania Aboriginal Cultural Landscape)

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data Inputs:
The maximum Ratings of each of the following layers:
- Tasmanian Heritage Register (Polygons)
- National Heritage Public

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0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping\RECFIT_Mapping_Model3.aprx 16/12/2022 15:09



Legend

- Project area
- Hydrology Constraint Ratings**
- 1: Low (Not within this category)
 - 2: Moderate (Not within this category)
 - 3: Medium (Not within this category)
 - 4: High (Not within this category)
 - 5: Very High/No-go (Waterbodies, watercourses, floodplains, irrigation infrastructure)

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data Inputs:
The maximum Ratings of each of the following layers:
- Hydrology Lines
- Hydrology Areas
- Irrigation Tasmania Dams
- Irrigation Tasmania Pipelines
- Floodplain 1:250k
- Public Flood Inundation Extent Models

Date: 15/12/2022 Version: 5



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Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping\Model3.aprx 16/12/2022 15:09



aurecon



Legend

- Project area
- Infrastructure Constraint Ratings**
- 1: Low (Not within this category)
 - 2: Moderate (Not within this category)
 - 3: Medium (Not within this category)
 - 4: High (Gas pipeline corridors)
 - 5: Very High/No-go (Not within this category)

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data Inputs:
The maximum Ratings of each of the following layers:
- Enwave Gas Declared Pipeline Corridor
- Gas Pipeline Planning Corridors

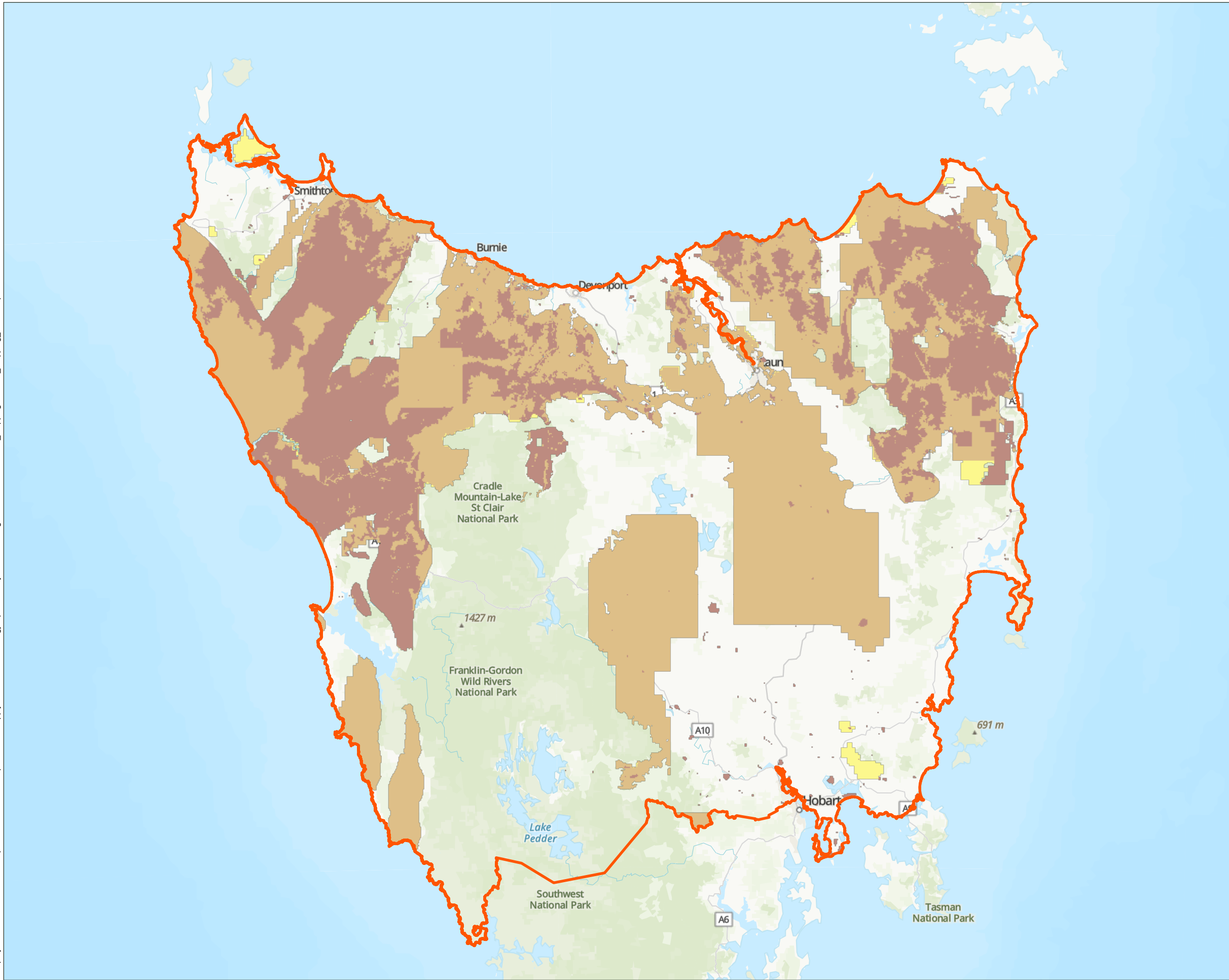
Date: 15/12/2022 Version: 5



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Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping_Model3.aprx 16/12/2022 15:09



Legend

- Project area
- Mining Constraint Ratings**
- 1: Low (Not within this category)
 - 2: Moderate (Exploration Licenses [EL] category 2, 3, 4 and 5)
 - 3: Medium (Exploration Licenses category 1 [EL, SEL] and 6 [EL]/strategic mining areas on private land)
 - 4: High (Not within this category)
 - 5: Very High /No-go (Mining leases/Retention Licences/strategic mining areas within SPZs on Crown land)

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data Inputs:
The maximum Ratings of each of the following layers:
- Leases (500m buffer)
- License Categories 1-6 (exploration only)
- Retention Licenses (500m buffer)
- Mining Strategic Areas

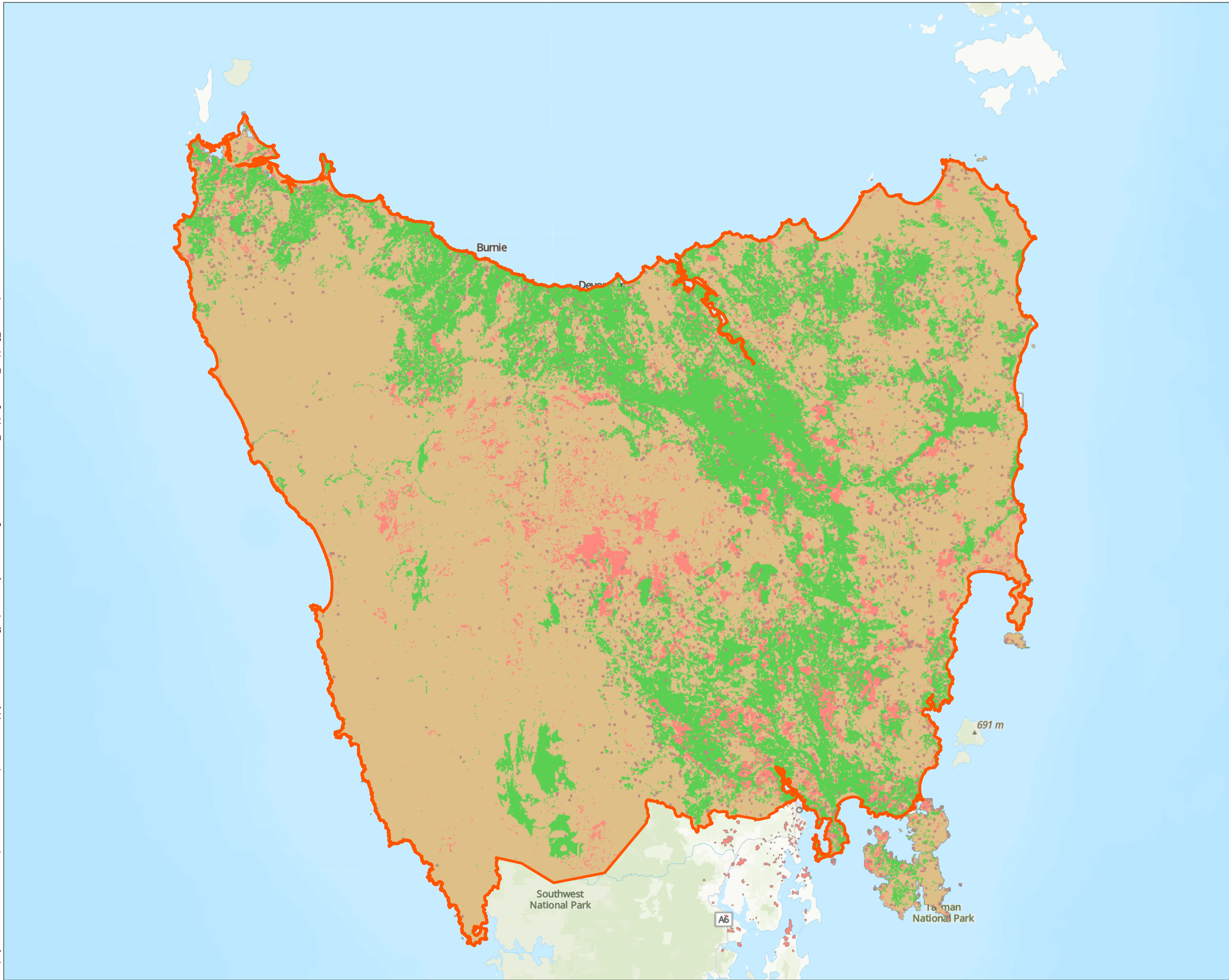
Date: 15/12/2022 Version: 5



0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping\Map3.aprx 16/12/2022 15:09



Legend

- Project area
- Natural Values Constraint Ratings**
- 1: Low (Agricultural, urban and exotic vegetation/ Other natural environments)
 - 2: Moderate (Not within this category)
 - 3: Medium (Threatened flora/fauna)
 - 4: High (Threatened native vegetation communities/ Private reserves)
 - 5: Very High/No-go (Raptor nests/Private Nature Reserves and Conservation Covenant (NCA))

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data Inputs:
The maximum Ratings of each of the following layers:
- Geoconservation sites
- Private Reserves (Conservation Covenants)
- Private Nature Reserve and Conservation Covenant (NCA)
- Private Sanctuary and Conservation Covenant (NCA)
- Local Government Reserves
- Raptor Nests (500m buffer)
- Threatened Flora
- Threatened Fauna
- Threatened Native Vegetations Communities
- Tasveg 3.0

Date: 15/12/2022

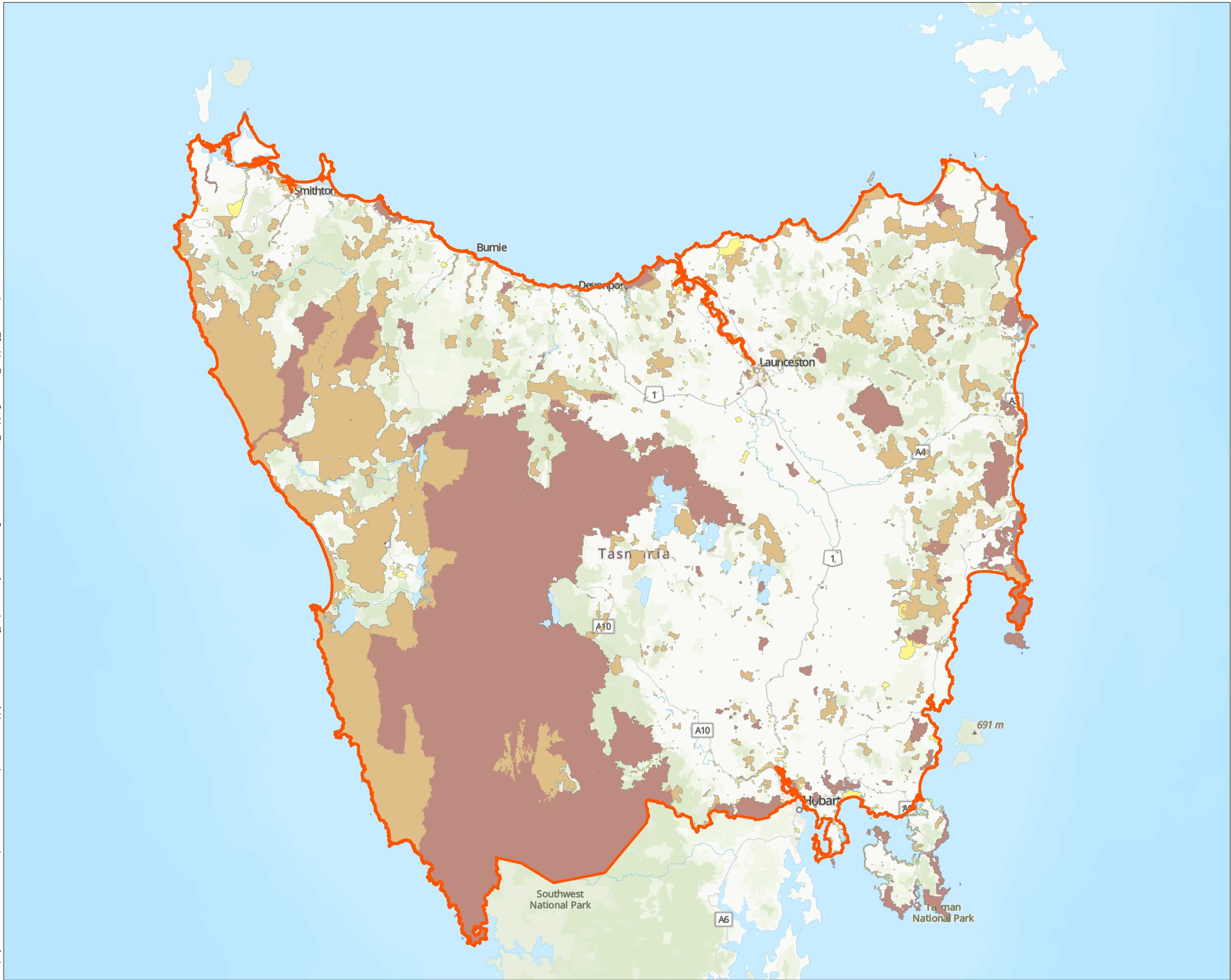
Version: 5



0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping_Model3.aprx 16/12/2022 15:09



Legend

- Project area
- Parks Constraint Ratings**
- 1: Low (Not within this category)
 - 2: Moderate (informal reserves on public land/public and private reserves and sanctuaries)
 - 3: Medium (Regional reserves/public Conservation Area/IPAs)
 - 4: High (Not within this category)
 - 5: Very High/No-go (RAMSAR wetlands/TWWHA/ Reserve Estates/public sites, reserves and parks)

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data Inputs:
The maximum Ratings of each of the following layers:
- Private Reserves
- Public Land Class
- Ramsar Wetlands
- Tasmanian Wilderness WHA
- Tasmanian Reserve Estates

Date: 15/12/2022

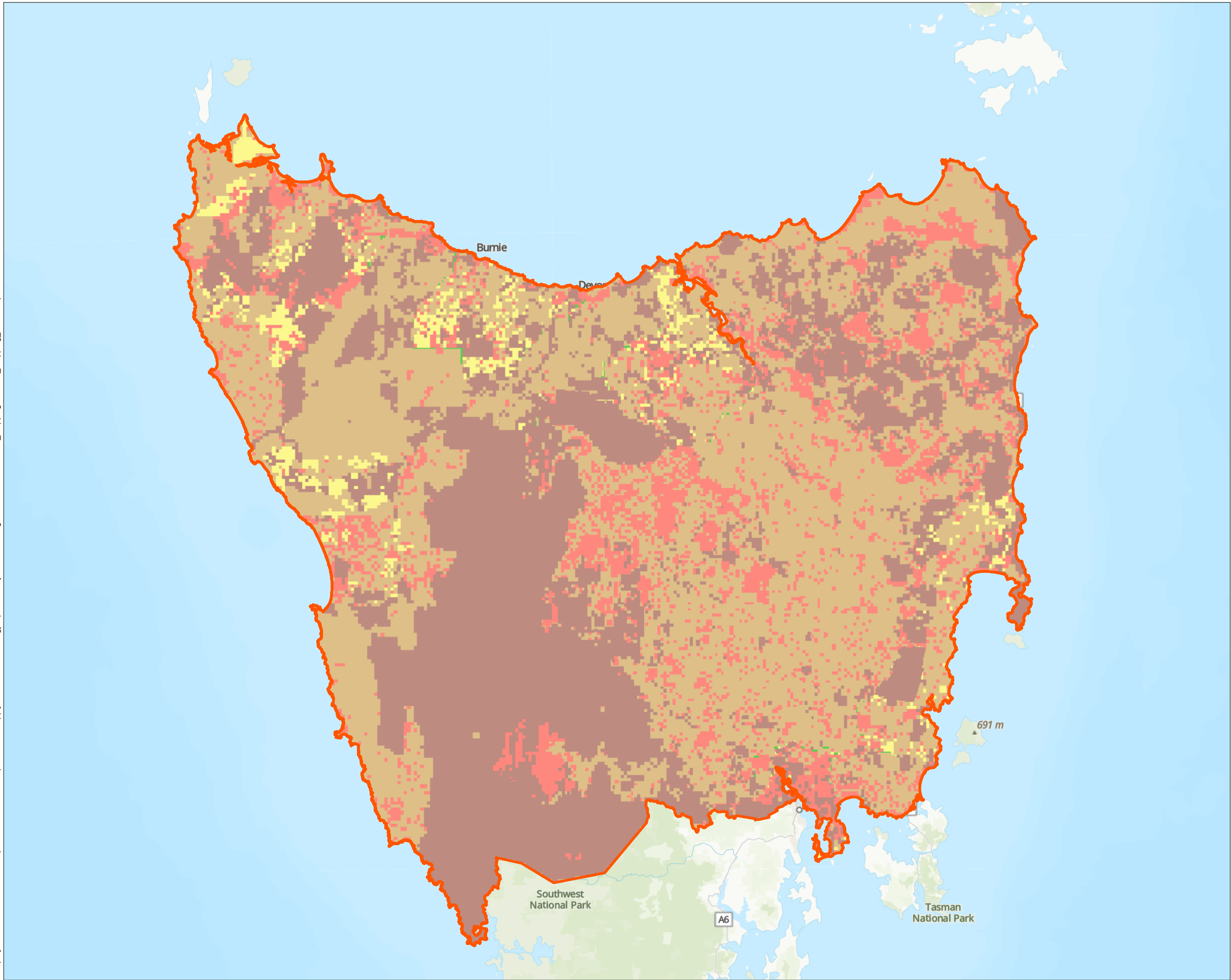
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0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

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Legend

- Project area
- Planning Constraint Ratings
- 1: Low
 - 2: Moderate
 - 3: Medium
 - 4: High
 - 5: Very High/No-go

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data Inputs:
The maximum Ratings of each of the following layers:
- Interim Planning Scheme Overlays
- Interim Planning Scheme Zoning
- Land Tenure
- Planning Scheme Code Overlays
- Planning Scheme General Overlays
- Planning Scheme Zones
- Prohibited Areas

Date: 15/12/2022

Version: 5



0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

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Legend

-  Project area
- Terrain Constraint Ratings**
-  1: Low (Ideal topography)
 -  2: Moderate (Extremely low acid sulfate soils and upland drainages/headwaters)
 -  3: Medium (High ridges/upper slopes/low acid sulphate soils/karsts)
 -  4: High (Canyons/high acid sulphate soils/karsts)
 -  5: Very High/No-go (Not within this category)

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data Inputs:
The maximum Ratings of each of the following layers:
- Acid Sulphate Soils (Inland and Coastal)
- Karsts
- NCH Landform Classifications

Date: 15/12/2022

Version: 5



0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping\RECFIT_Mapping_Model3.aprx 16/12/2022 15:09



Legend

- Project area
- Wind Speed Resource Ratings**
- 1: Very good (> 7.5)
 - 2: Good (7.0 to 7.5)
 - 3: Moderate (6.5 to 7.0)
 - 4: Poor (6.0 to 6.5)
 - 5: Very poor/uneconomic (< 6.0)

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data Inputs:
Global Wind Atlas, Australia, Wind Speed @ 150m,
<https://globalwindatlas.info>

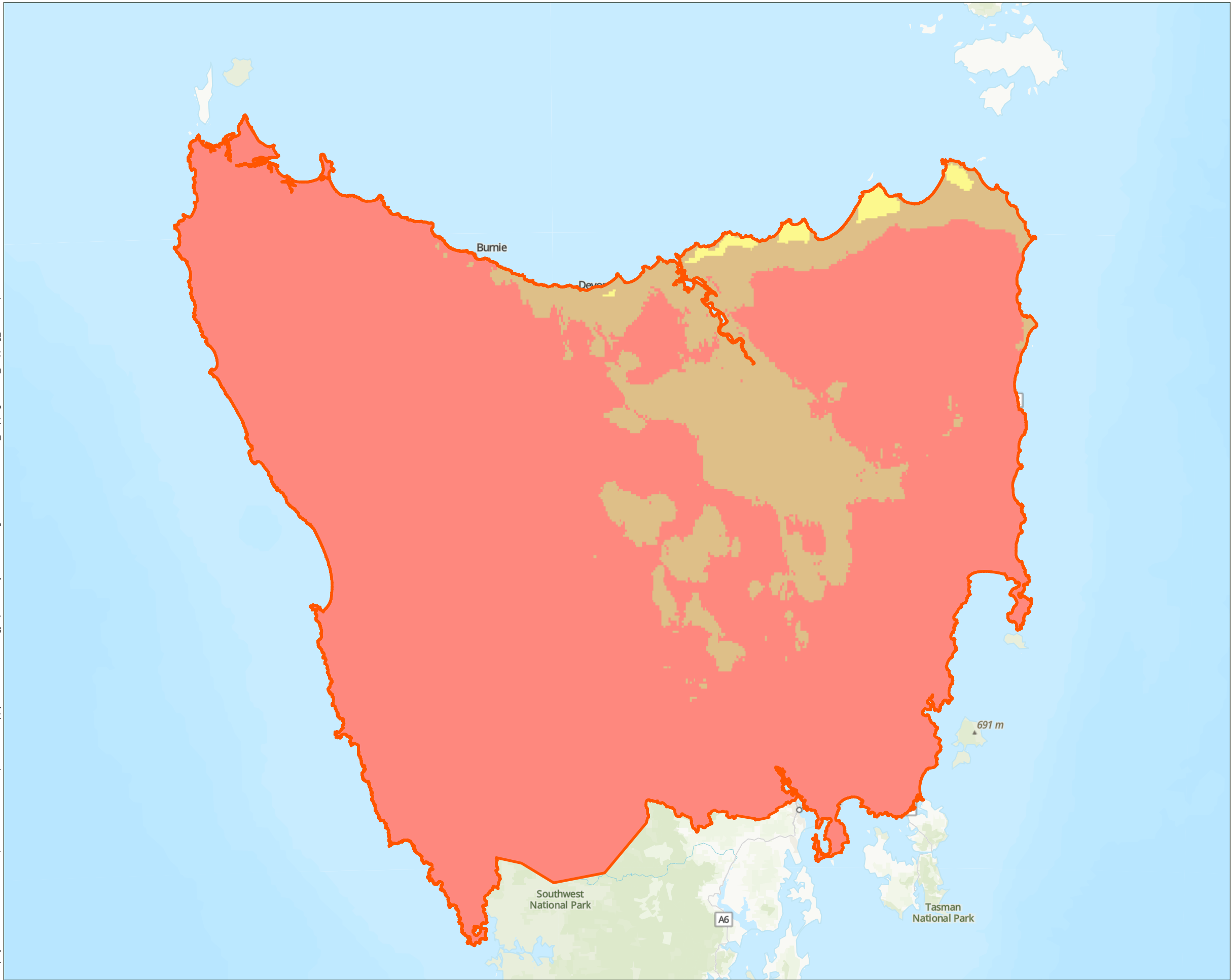
Date: 15/12/2022 Version: 5



0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping\RECFIT_Mapping_Model3.aprx 16/12/2022 15:09



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Legend

- Project area
- Solar PVOUT Resource Ratings
kWh/km2/yr
- 1: Very good (> 1600)
 - 2: Good (1500 to 1600)
 - 3: Moderate 1400 to 1500)
 - 4: Poor (< 1400)

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Data inputs:
Global annual Photovoltaic Power Potential data (PVOUT)

Date: 15/12/2022

Version: 5



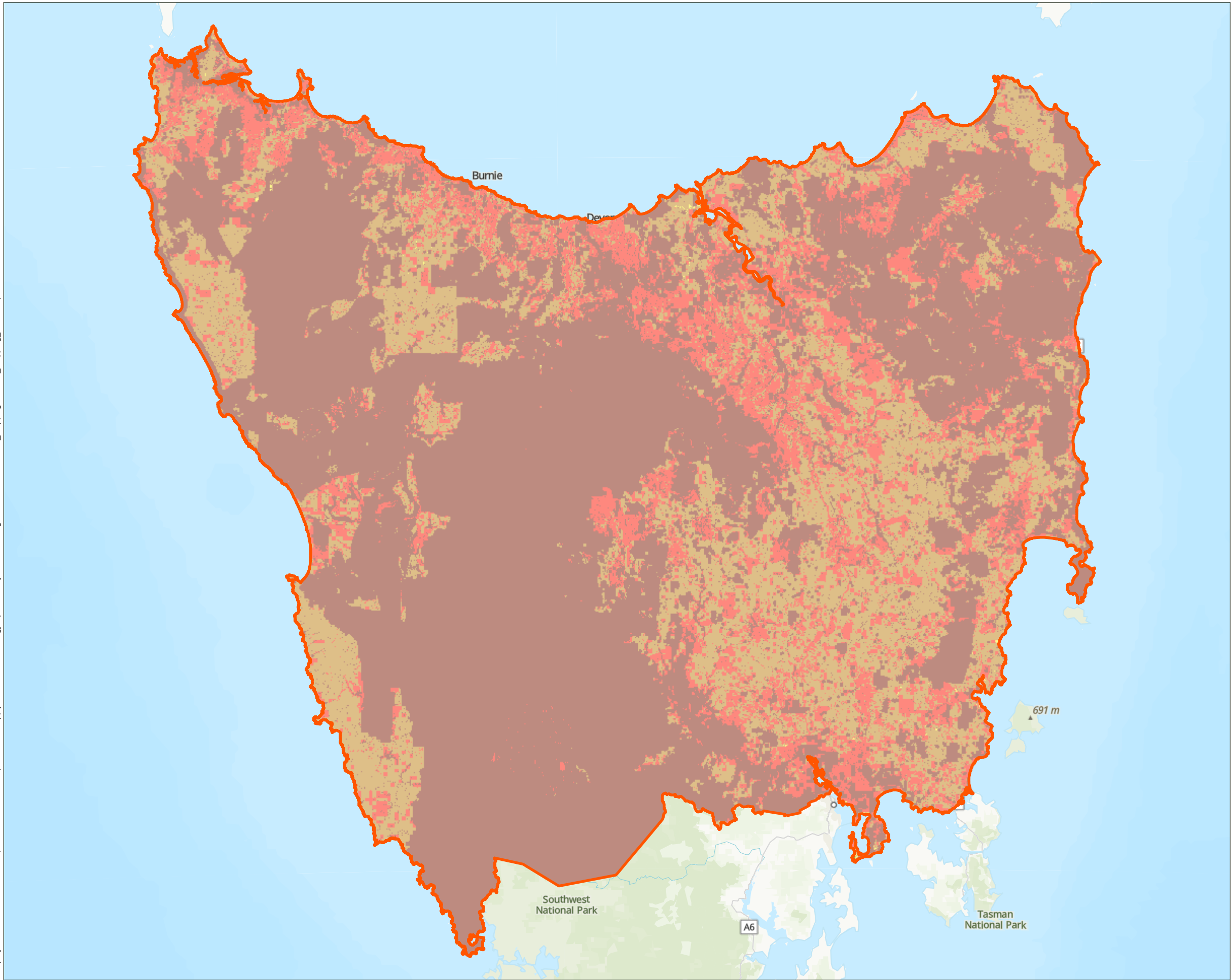
0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Renewable Energy Spatial Analysis
Figure D12: Solar PVOUT resource rating

Appendix E: Model outputs

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping\RECFIT_Mapping_Model3.aprx 12/08/2022 10:17



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Legend

- Project area
- Overall Maximum Constraint Ratings
- 1: Low
 - 2: Moderate
 - 3: Medium
 - 4: High
 - 5: Very High/No-go

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

The maximum rating encountered from all layers present at each location.

Date: 12/08/2022 Version: 5

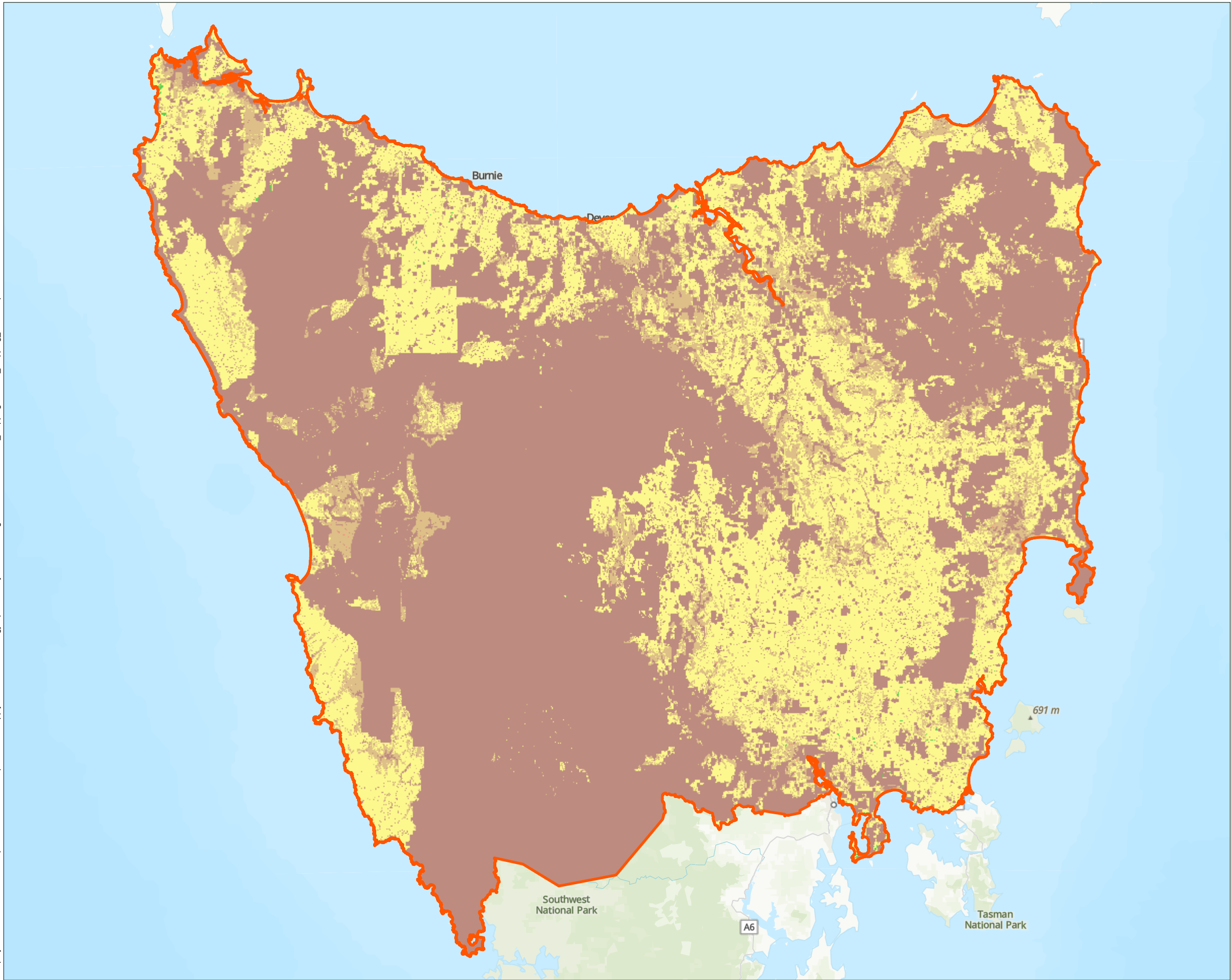


0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Renewable Energy Spatial Analysis
Figure E1: Overall Maximum Constraint Ratings

Map by: DMcP C:\Users\dave.mcpherson\Aurecon Group\521751 - Supply of Renewable Energy Spatial Analysis - 5 Working Files\GIS\Pro\RECFIT_Mapping\RECFIT_Mapping\RECFIT_Mapping_Model3.aprx 12/08/2022 10:17



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Legend

- Project area
- Overall Constraint Ratings Assessment
- 1 (1 - 1.5): Low
 - 2 (1.51 - 2.5): Moderate
 - 3 (2.51 - 3.5): Medium
 - 4 (3.51 - 4.5): High
 - 5 (4.51 - 5): Very High/No-go

Data Sources:
Aurecon 2022
Geosciences Australia 2022
The List 2022
ESRI 2022

Hybrid model showing the mean of input layer maximum ratings, but preserving a No-go rating of 5 from any layer.

Date: 12/08/2022

Version: 5



0 10 20 30 40 50 km

Job No: 521751
Coordinate System: GDA2020 MGA Zone 55

Renewable Energy Spatial Analysis

Figure E2: Overall Max/Mean Ratings Constraint Assessment

Appendix H: Histograms

To assist the TWG in assessing the candidate areas in terms of the impacts on each category, a series of histograms was developed showing the distribution of ratings 1-5 for each category's maximum sub-model – noting that these group maxima themselves comprised a number of constraint layers. A sample histogram is shown in Figure.

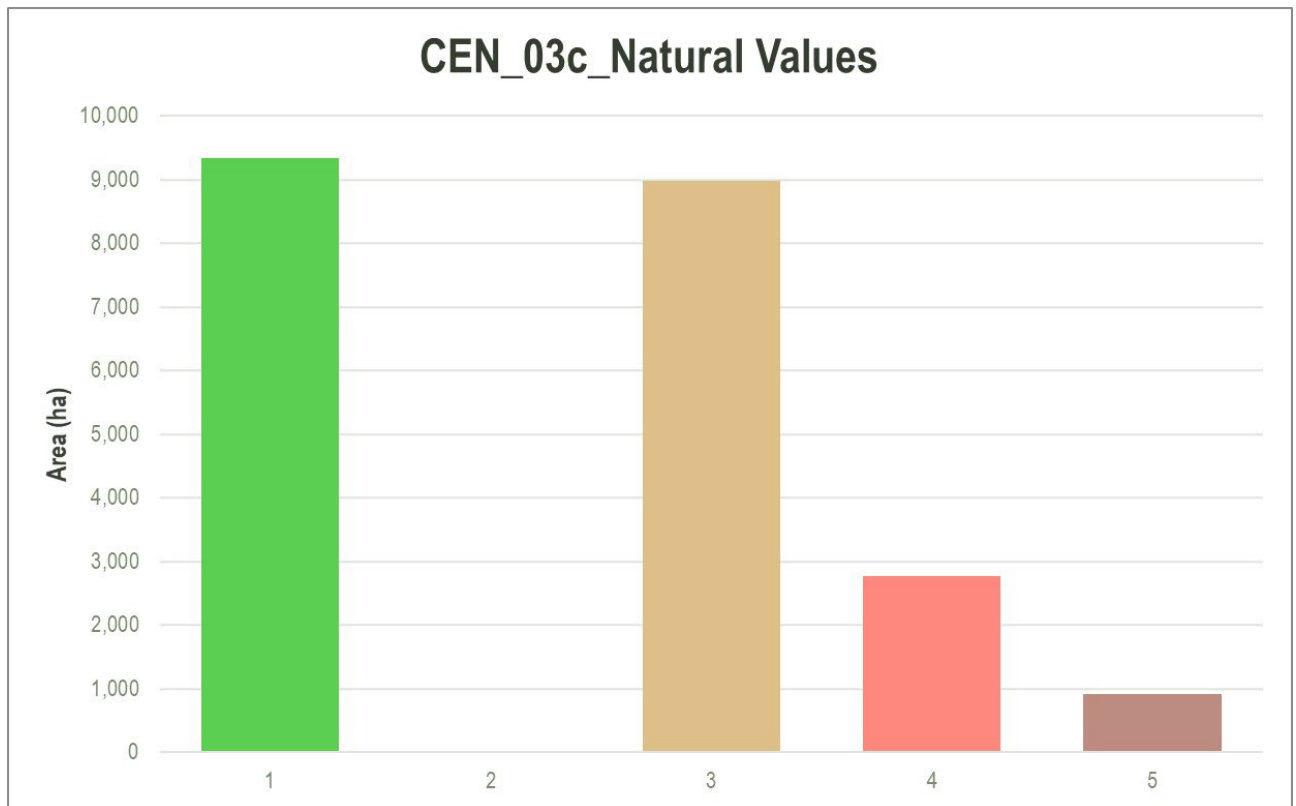


Figure: Group maximum histogram for Candidate CEN_03c

This histogram shows that:

- For the Natural Values group, Candidate CEN_03c comprises (approximately):
 - 9,250ha of land rated “1”
 - 0ha (no land) rated “2”
 - 9,000ha land rated “3”
 - 2,800ha land rated “4”
 - 950ha land rated “5”
 - Total area rated for Natural Values: 22,000ha

From Appendix G, above, it can be seen that Candidate CEN_03c has an area of 22,000ha with a developable area of 18,502ha.

The histograms are submitted as a set of JPEG images with this report and are also displayed on the one-pager maps described below.

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