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VEGETATION REPORT

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SPECIALIST REPORT DETAILS

This report has been prepared as per the requirements of Section 32 of Government Notice No. R. 983 dated December 2014 (Environmental Impact Assessment Regulations) under sections 24(5), 24M and 44 of the National Environmental Management Act, 1998 (Act 107 of 1998).

I, declare that this report has been prepared independently of any influence or prejudice as may be specified by the Department Economic Development, Tourism and Environmental Affairs (EDTEA).

Signed: 

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RICHARDS BAY PORT ECOLOGICAL, RICHARDS BAY, KWAZULU-NATAL

VEGETATION REPORT

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VEGETATION REPORT

1. INTRODUCTION

SiVEST Environmental Division has been appointed by **Transnet National Ports Authority (TNPA)**, to undertake a Baseline Ecological Assessment for the Port of Richard's Bay Naval Island, Casuarina, Railyard North and Harbour West Areas, as requested by Transnet National Ports Authority (TNPA).

2. PROJECT DESCRIPTION & MOTIVATION

Transnet National Ports Authority (TNPA) require the undertaking of a Baseline Ecological Survey (BES), to determine the current ecological status of the areas earmarked for development in the area. Some areas have been highly transformed however still host important vegetation and faunal communities and species, as well as sensitive wetland environments. Assessment is required to ascertain the ecological status of the earmarked areas prior to commissioning of any development, as envisaged in the Port Development Framework.

3. REGULATIONS GOVERNING THIS REPORT & LEGISLATION

Further to the Terms of Reference, the following protocol is extracted from the National Environmental Management Act, Act 108 of 1998 (NEMA) as amended in 2014. The relevant Section is included below for your ease of reference:

Specialist reports and reports on specialised processes

- (1) *An applicant or the EAP managing an application may appoint a person who is independent to carry out a specialist study or specialised process.*
- (2) *The Person referred to in sub-regulation (1) must comply with the requirements of Regulation 17.*
- (3) *A specialist report or a report on a specialised process prepared in terms of these Regulations must contain –*
 - (a) *details of –*
 - (i) *the person who prepared the report; and*

- (ii) *the expertise of that person to carry out the specialist study or specialised process;*
- (b) *a declaration that the person is independent in a form as may be specified by the competent authority;*
- (c) *an indication of the scope of, and the purpose for which, the report was prepared;*
- (d) *a description of the methodology adopted in preparing the report or carrying out the specialised process;*
- (e) *a description of any assumptions made and any uncertainties or gaps in knowledge;*
- (f) *a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment;*
- (g) *recommendations in respect of any mitigation measures that should be considered by the applicant and the competent authority;*
- (h) *a description of any consultation process that was undertaken during the course of carrying out the study;*
- (i) *a summary and copies of any comments that were received during any consultation process;*
and
- (j) *any other information requested by the competent authority.*

In addition there are various Sections of the legislation that would be applicable to the proposed development and / or the land as it currently is.

3.1 National Environmental Management Act, Act No. 107 of 1998 (NEMA)

NEMA requires, *inter alia*, that:

“Development must be socially, environmentally, and economically sustainable”,

“Disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied.”

“A risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions”,

NEMA also states that;

“The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people’s common heritage.”

3.2 NATIONAL FORESTS ACT (ACT NO. 84 OF 1998)

According to this act, the Minister may declare a tree, group of trees, woodland or a species of trees as protected. The prohibitions provide that;

“No person may cut, damage, disturb, destroy or remove any protected tree, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister.”

Any disturbance, removal, pruning or transplanting of these species would require a licence from the administrators of the National Forests Act, who are an extension of the Department of Agriculture, Forestry and Fisheries (DAFF) based in Pietermaritzburg.

3.3 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT NO. 10 OF 2004)

In terms of the Biodiversity Act, the developer has a responsibility for:

- The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations).
- Promote the application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all development within the area are in line with ecological sustainable development and protection of biodiversity.
- Limit further loss of biodiversity and conserve endangered ecosystems.

3.4 CONSERVATION OF AGRICULTURAL RESOURCES (ACT NO. 43 OF 1983) AS AMENDED IN 2001

Declared Weeds and Invaders in South Africa are categorised according to one of the following categories:

Category 1 *plants: are prohibited and must be controlled.*

Category 2 *plants: (commercially used plants) may be grown in demarcated areas providing that there is a permit and that steps are taken to prevent their spread.*

Category 3 *plants: (ornamentally used plants) may no longer be planted; existing plants may remain, as long as all reasonable steps are taken to prevent the spreading thereof, except within the flood line of watercourses and wetlands.*

3.5 PERMIT / LICENCE REQUIREMENTS

In terms of the National Forests Act, 1998 (Act No. 84 of 1998) and Government Notice 1339 of 6 August 1976 (promulgated under the Forest Act, 1984 (Act No. 122 of 1984) for protected tree species), the removal, relocation or pruning of any protected plants will require a license.

Protected indigenous plants in general are controlled under the relevant provincial Ordinances or Acts dealing with nature conservation. In KZN the relevant statute is the 1974 Provincial Nature Conservation Ordinance. In terms of this Ordinance, a permit must be obtained from *Ezemvelo KZN Wildlife* to remove or destroy any plants listed in the Ordinance. However, the list for Specially Protected Species in KwaZulu-Natal was (1974) has become very difficult to interpret and to apply to the plant species recorded during vegetation surveys. This is because of major taxonomic changes in the petaloid monocots. It must be noted that this list is in urgent need of an update. Therefore subjective decisions regarding a species protection status have to be taken which may not always be in agreement with the 1974 Ordinance.

4. SAMPLING METHODOLOGY

4.1 Vegetation Sampling

A random vegetation sampling technique and “hotspot¹” assessment technique was utilised, which focused the sampling effort on areas with natural vegetation or where the vegetation was dominated by indigenous species (i.e. not comprising a large proportion of alien invasive plant species). Individual plant species observed during the assessment were recorded to give an indication of species diversity and the overall species assemblage.

Please note that the intensity of the sampling procedure is prescribed by budgetary constraints. The sampling procedure proposed for this study is satisfactory for providing a general overview and rapid assessment of the plant diversity and assemblages that occur on site. This methodology allows sufficient information to be gathered to make the necessary inferences as to the ecological state of the receiving environment and to assess the possible impacts that may be imparted as a result of the proposed activities.

4.2 Conservation Importance Assessment

Within the context of this vegetation assessment, conservation importance is broadly defined as the importance of the encountered vegetation communities (vegetation fragment) as a whole, in terms of

¹ Hotspot in this context refers to areas in the landscape, such as rocky outcrops and wetlands that supply refugia to plant species that would otherwise not exist in said landscape due to disturbance.

the role these areas will fulfil in the preservation and maintenance of biodiversity in the local area. Biodiversity maintenance / importance are a function of the specific biodiversity attributes and noteworthiness of the vegetation communities in question and the biotic integrity and future viability of these features.

The biodiversity noteworthiness of the system is a function of the following:

- species richness/diversity;
- rarity of the system;
- conservation status of the system;
- habitat (real or potential) for Red Data Species; and
- presence of unique and/or special features,

The integrity and future viability of the system is a function of the following:

- Extent of buffer around the system;
- Connectivity of system to other natural areas in the landscape;
- Level of alteration to indigenous vegetation communities within the system;
- Level of invasive and pioneer species encroachment system; and
- Presence of hazardous and/or obstructive boundaries to fauna.

The scores for each function of biodiversity maintenance were determined according to the scoring system shown in **Table 1** below. The scores were totaled and averaged to determine the biodiversity maintenance services score. Thereafter, the overall scores were rated according to the rating scale in **Table 2** below.

Table 1. Biodiversity maintenance services score sheet (Template and Description)

Biodiversity Noteworthiness	Scores				
	0	1	2	3	4
Diversity	Low	Med-Low	Medium	Med-High	High
Rarity	Low	Med-Low	Medium	Med-High	High
Conservation Status	Least Concern	Near-Threatened	Vulnerable	Endangered	Critically Endangered
Red Data	No	-	-	-	Yes
Uniqueness / Special features	None	Med-Low	Medium	Med-High	High
Integrity & Future Viability	0	1	2	3	4
Buffer	Low	Med-Low	Medium	Med-High	High
Connectivity	Low	Med-Low	Medium	Med-High	High

Alteration	>50%	25-50%	5-25%	1-5%	<1%
Invasive/pioneers	>50%	25-50%	5-25%	1-5%	<1%
Size	<1 ha	1 – 2 ha	3 - 10 ha	10 – 15 ha	>15 ha

Table 2. Rating Scale for Biodiversity Maintenance services based on Assessment scores

Score:	0-0.8	0.9-1.6	1.7-2.4	2.5-3.2	3.3-4.0
Rating of the likely extent to which a service is being performed	Low	Moderately Low	Intermediate	Moderately High	High

5. DESKTOP ASSESSMENT

One of the major advantages that technology has provided is the access to information. As a result of this and the ongoing pursuance of environmental knowledge, databases which can be interrogated to provide general information regarding the site have been developed.

This information in turn potentially records what may occur on the site and the sites value from a regional / provincial perspective in terms of conservation and biodiversity.

The caveat here is that the majority of these databases are created at a landscape level. In addition, the factors which are often utilised to determine many of the outputs are related to abiotic characteristics, such as;

- Rainfall;
- Temperature;
- Soil types;
- Underlying geology, and;
- Elevation and aspect.

The result, therefore, is the development of a database that provides a high level assessment of the area, which requires substantial ground-truthing to illustrate the various components that comprise the landscape. The field survey may highlight areas of conservation significance and biodiversity richness as well as provide information regarding the *status quo*; and what consequences or concerns may be generated as a result of a proposed development.

A number of databases have been interrogated in the process of undertaking the Desktop Analysis. A summary of the methodology utilised for the generation of each of the databases are included below:

5.1 Ezemvelo KZN wildlife C-Plan & SEA Database

The C-Plan is a systematic conservation-planning package that runs with the GIS software ArcGIS, and which analyses biodiversity features and landscape units. C-Plan is used to identify a national reserve system that will satisfy specified conservation targets for biodiversity features (**Ezemvelo KZN Wildlife, 2010**). Biodiversity features can be land classes or species, and targets are set within area units either for land classes, or as numbers of occurrences of species for species locality data sets (**Ezemvelo KZN Wildlife, 2010**). These units or measurements are used as surrogates for un-sampled data. The C-Plan is an effective conservation tool when determining priority areas at a regional level and is being used in South Africa to identify areas of high conservation value. The SEA (**Goodman, 2004**) modelled the distribution of a selection of 255 red data and endemic species that have the potential to occur in the area.

5.1.1 Irreplaceability Analysis

The following is referenced from **Goodman (2004)**:

The first product of the conservation planning analysis in C-Plan is irreplaceability map of the planning area, in this case the province of KwaZulu-Natal. This map is divided into grid cells called 'Planning Units'.

Each planning unit has associated with it an 'Irreplaceability Value', which is a reflection of the planning units' importance with respect to the conservation of biodiversity. Irreplaceability reflects the planning unit's ability to meet set 'targets' for selected biodiversity 'features'. The irreplaceability value is scaled between 0 and 1.

Irreplaceability value – 0. Where a planning unit has an irreplaceability value of 0, all biodiversity features recorded here are conserved to the target amount, and there is unlikely to be a biodiversity concern with the development of the site.

Irreplaceability value – 1. These planning units are referred to as totally irreplaceable and the conservation of the features within them is critical to meet conservation targets. (EIA very definitely required and depending on the nature of the proposal unlikely to be granted).

Irreplaceability value > 0 but < 1. Some of these planning units are still required to meet biodiversity conservation targets. If the value is high (e.g. 0.9) then most units are required (few options available for alternative choices). If the value is low, then many options are available for meeting the biodiversity targets. (EIA required and depending on the nature of the proposed development, permission could be granted)."

The irreplaceability units have been optimised further to create various subcategories called *Critical Biodiversity Areas* and *Ecological Support Areas* (**Ezemvelo KZN Wildlife, 2014**).

5.1.2 Critical Biodiversity Areas

Critical Biodiversity Areas (CBAs) can be divided into two subcategories, namely *Irreplaceable* and *Optimal*. Each of these can in turn be subdivided into additional subcategories (**Table 3**). The CBA categories are based on the optimised outputs derived using systematic conservation planning software, with the Planning Units (PU) identified representing the localities for which the conservation targets for one or more of the biodiversity features contained within can be achieved.

The distribution of the biodiversity features is not always applicable to the entire extent of the PU, but is more often than not confined to a specific niche habitat e.g. a forest or wetland reflected as a portion of the PU in question. In such cases, development could be considered within the PU if special mitigation measures are put in place to safeguard this feature(s) and if the nature of the development is commensurate with the conservation objectives. Obviously this is dependent on a site by site, case by case basis.

Using C-Plan, areas are identified through the MINSET analysis process and reflect the negotiable sites with an Irreplaceability score of less than 0.8. Within the C-Plan MINSET analysis this does not mean they are of a lower biodiversity value. It simply means more options are available for the safeguarding of sensitive or important features over and above the required conservation targets (e.g. 30% of a certain vegetation type remains and the conservation target is 25%). The determination of the spatial locality of these PU's is driven primarily by the Decision Support Layers.

Table 3. Summary of CBA Categories (from *Ezemvelo* KZN Wildlife, Biodiversity Spatial Planning Terms).

Category	C-Plan	MARXAN	Expert Input/ Desktop	Biodiversity Sector and Regional Plans
CBA: Irreplaceable (SCA)	Irreplaceability = 1	No equivalent		CBA: Irreplaceable
CBA: High Irreplaceable(SCA)	Irreplaceability Score ≥ 0.8 and < 1.0	Selection frequency value = 80% –100%		CBA: Irreplaceable
CBA: Irreplaceable Expert Input			Expert input	CBA: Irreplaceable
CBA: Irreplaceable Linkage			Desktop and expert input	CBA: Irreplaceable
CBA: Optimal (SCA)	Irreplaceability Score > 0 and < 0.8	“Best” solution from MARXAN runs less the identified CBA High Irreplaceability areas		CBA: Optimal
CBA: Optimal, High Degradation	Irreplaceability Score > 0 and < 0.8	“Best” solution from MARXAN runs less the identified CBA High Irreplaceability areas	Field Assessment	CBA: Optimal
CBA: Optimal Low Degradation	Irreplaceability Score > 0 and < 0.8	“Best” solution from MARXAN runs less the identified CBA High Irreplaceability areas	Field Assessment	CBA: Optimal
CBA: Optimal Expert Input			Expert input	CBA: Optimal

5.1.3 Ecological Support Areas

Ecological Support Areas (ESAs) are required to support and sustain the ecological functioning of Critical Biodiversity Areas (CBAs). For terrestrial and aquatic environments, these areas are functional but are not necessarily pristine natural areas. They are required to ensure the persistence and maintenance of biodiversity patterns and ecological processes within the CBAs, and contribute significantly to the maintenance of Ecological Infrastructure² (EI).

5.1.4 Landscape Corridors

A series of bio-geographic corridors were created in KZN to facilitate evolutionary, ecological and climate change processes to create a linked landscape for the conservation of species in a fragmented landscape.

5.1.5 Local Corridors

Corridors were developed at a district scale to create fine scale links within the landscape that facilitate ecological processes and ensure persistence of critical biodiversity features.

5.1.6 SEA, C-Plan and CBA Biodiversity Features / Species within Project Area

In terms of the desktop analysis undertaken, the site is classified as 0.005, i.e. all biodiversity features recorded here are conserved to the target amount, and there is unlikely to be a biodiversity concern with the development of the site. The Minset analysis mirrors the C-Plan data with the irreplaceable area being deemed as not requiring protection.

There are several features present within the footprint which are considered to be of environmental significance and conservation importance. These features have been generated as a result of running the SEA data. These are included in **Table 4** below.

² A term referring to areas in the landscape which provide significant Ecosystem Services which contribute positively to the economy and human welfare. Examples include 'Flood mitigation' and 'Good Water Quality' (provided both by wetlands and well maintained water catchments). Ecological infrastructure is the stock of functioning ecosystems that provides a flow of essential system services to human communities – services such as the provision of fresh water, climate regulation and soil formation. Ecological infrastructure includes features such as healthy mountain catchments, rivers, wetlands, and nodes and corridors of natural grassland habitat which together form a network of interconnected structural elements within the landscape. If this ecological infrastructure is degraded or lost, the flow of ecosystem services will diminish and ecosystems will become vulnerable to shocks and disturbances, such as the impacts of climate change, unsustainable land use change and natural disasters like floods and droughts. It is important to note that when ecological infrastructure is degraded or fails, the direct monetary cost to society and government is often very high. Ecological infrastructure is, therefore, the nature-based equivalent of hard infrastructure, and is just as important for providing the vital services that underpin social development and economic activity.

In terms of the Minset/ C-Plan data generated, through the physical characteristics that are present on site, the species have been identified as potentially present on the site, and these groups are wholly significant in terms of conservation significance or parts thereof. **Table 5** below identifies which species are significant

Table 4. SEA Data taken from Ezemvelo KZN Wildlife

YES	NO
Wetlands	Protected Plants
Birds	Medicinal Plants
Invertebrates	Grasslands
Mammals	
Forests	
Frogs	
Reptiles	

Table 5. Minset / C-Plan Data taken from Ezemvelo KZN Wildlife

SPECIES NAME	TYPE
<i>Teriomima zuluana</i>	Butterfly
<i>Whitea coniceps</i>	Grasshopper
<i>Parepistaurus eburlineatus</i>	Grasshopper
<i>Orthoporoides corrugatus</i>	Millipede

The CBA data (**Appendix 2**) indicates that the site is largely CBA Irreplaceable, however this will be verified during the ground truthing exercise.

5.2 Bio Resource Units (BRU)

A Bioresource Unit is a demarcated area in which the environmental conditions such as soil, vegetation, climate and, to a lesser degree, terrain form, are sufficiently similar to permit uniform recommendations of land use and farm practices to be made, to assess the magnitude of crop yields that can be achieved, to provide a framework in which an adaptive research programme can be carried out, and to enable land users to make correct decisions (**Camp, K.G.T. 1998**).

The environmental factors defined in a BRU should give an indication of habitat suitability for both plant and animal species. On the other hand, knowing the habitat requirements of any particular species, it should be possible to map locations suitable for such species. There are 590 BRUs in KwaZulu-Natal.

5.3 Bioresource Unit within the project are

5.3.1 Za 8 – Richards Bay

The vegetation pattern is comprised of bushland and swamp.

The rainfall average is 786 mm per year. The mean temperature is 21.1 °C and the climate rating is C1, which has low limitation on crop growing. There is no frost hazard and the erosion rating for the site is 4.2, which translates to a high risk of erosion (**Table 6**).

There are 3 perennial rivers identified for this BRU. Please note there are a number of drainage lines, non-perennial streams and wetlands that are not captured at the coarse level at which this data has been defined.

Table 6 Climate Table for Richards Bay

	Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RAINFALL													
Median rainfall (mm)	981	116	119	123	83	58	38	41	45	63	81	98	111
Mean rainfall (mm)	1209	120	134	163	105	84	70	63	61	81	75	87	106
TEMPERATURE													
Average (degrees C)	21.1	24	24	22	20	17.7	17.2	18	20	22	22	24	24
Minimum (degrees C)	16.3	20	20	19	17	14.9	12.1	12	13	15	15	16	19
Maximum (degrees C)	25.8	29	28.8	28	26	25	23	23	24	24	24	25.1	26
SUNSHINE													
Hours/day (Oct-Mar)	6.4												
Mean annual (hours)	6.9												

5.4 Environmental Potential Atlas

The following is referenced from the Department of Environmental Affairs and Tourism (2007): The Environmental Potential Atlas (ENPAT) developed from a single map of Gauteng to a complete spatial data set of the entire South Africa.

ENPAT was updated in July 2001 and is used by the National Department of Environmental Affairs and Tourism and various provincial environmental management departments as a decision-making tool in

the process of environmental impact assessments. ENPAT includes the decision-making parameters such as: high-risk development category indications and potential impacts are linked to the 1:250 000 spatial databases on national and provincial level.

The main purpose of ENPAT is to proactively indicate potential conflicts between development proposals and critical or sensitive environments. ENPAT can also be used for development planning since it indicates the environment's potential for development.

ENPAT consists of two distinct, parallel sets of information: natural or environmental characteristics, and social-economic factors. The environmental character maps depict geology, land types, soils, vegetation, and hydrology. The socio-economic factors consist of land cover, cadastral aspects and infrastructure, land use and culture.

These two sets of information are combined and assessed in terms of their potential or latent environmental sensitivity. Sensitivity is assigned based on the ability of a resource to absorb change or impact. A value of **0** indicates a **low sensitivity** - thus a high ability to accept change and a value of **1** indicates a **high sensitivity**, or a low ability to accept change. Areas of low sensitivity are thus available or suitable for development.

5.4.1 ENPAT Data for the project area

The ENPAT data provides the following information about the soils and geology for the site:

The geology of the site is comprised of alluvium, which is not sensitive to disturbance and development. However the soils are of moderate to poor drainage and present an erosion hazard if not managed correctly (Department of Environmental Affairs and Tourism 2007).

5.5 Vegetation Assessment

5.5.1 Mucina and Rutherford's Vegetation Assessment

Mucina and Rutherford present an up-to-date and comprehensive overview of the vegetation of South Africa and the two small neighbouring countries of Lesotho and Swaziland. This account is based on vegetation survey using appropriate tools of contemporary vegetation mapping and vegetation description. They aimed at drawing a new vegetation map that depicts the complexity and macro-scale ecology and reflects the level of knowledge of the vegetation of the region. This is an extensive account of the vegetation of a complex and biologically intriguing part of the world, offering not only insights into structure and dynamics of the vegetation cover, but containing a wealth of base-line data for further vegetation- ecological, biogeographical, and conservation-oriented studies. The map and the descriptive account of the vegetation of South Africa, Lesotho and Swaziland offers a powerful decision-making tool for conservationists, land and resource planners, and politicians as well as the interested

public at large. KwaZulu-Natal (KZN) province is rich in natural diversity. In terms of vegetation, the site falls within the Indian Ocean Coastal Belt.

In terms of the vegetation on site, the general classification is made at a very coarse scale, i.e. low resolution and falls within the Maputaland Coastal Belt (CB 1) vegetation type and Fresh water wetlands (AZf 6).

Maputaland Coastal Belt (CB 1)

Distribution

KwaZulu-Natal Province (and continuing also in southern Mozambique): Up to 35 km broad strip along the coast of the Indian Ocean stretching from the Mozambique boarder in the north to Mtunzini in the south. Altitude varies from about 20 – 120 m.

Conservation

The vegetation type is considered Vulnerable, with a conservation target of 25%. 15% statutorily conserved in the Greater St Lucia Wetland Park as well as in Sileza, Enseleni and Amathikulu Nature Reserves. More than 30% transformed for plantations and cultivation and by urban sprawl. Aliens include scattered populations of *Chromolaena* and *Lantana camara*. Most of the Maputaland Coastal Belt is agricultural land and very little of this unit remains in a natural state in the South African part of Maputaland. A much larger area of well-preserved coastal belt is found in Mozambique. The primary grasslands of interdune depressions and seasonally waterlogged bottomlands of the Maputaland were classified by Matthews *et al.* (1999) at the *Eragrostis lappula-Helichrysopsis septentrionalis* and *Ischaemum fasciculatum-Eragrostis inamoena* hygrophilous grasslands, and by Lubbe (1997) as *Ischaemum fasciculatum-Centella asiatica* hygrophilous grassland. Like the Maputaland Wooded Grasslands, these primary grasslands are home to a number of Maputaland endemics such as the enigmatic *Restio zuluensis* and *Helichrysopsis septentrionale*.

Indicative Plant Species

Low Shrubs: *Agathisanthemum bojeri*, *Helichrysum kraussii*, *Tephrosia longipes*.

Small Trees & Tall Shrubs: *Syzygium cordatum*, *Acacia natalitia*, *Annona senegalensis*, *Apodytes dimidiata*, *Bridelia cathartica*, *Canthium inerme*, *Chrysanthemoides monilifera* subsp. *rotundata*, *Euclea natalensis* subsp. *natalensis*, *Ficus burtt-davyi*, *Kraussia floribunda*, *Phoenix reclinata*, *Searsia natalensis*, *Sapium integerrimum*, *Strychnos spinosa*.

Woody Climbers: *Abrus precatorius* subsp. *africanus*, *Smilax anceps*.

Herbs: *Achyranthes aspera*, *Centella asiatica*, *Chamaecrista plumose*, *Hermbstaedtia odorata* var. *aurantiaca*, *Vernonia centaureoides*, *V. oligocephala*.

Graminoides: *Diheteropogon amplexans*, *Eragrostis sclerantha*, *Ischaemum fasciculatum*, *Themeda triandra*, *Urelytrum agropyroides*, *Aristida stipitata* subsp. *graciliflora*, *Cymbopogon pospischilii*, *Elionurus muticus*, *Eragrostis inamoena*, *E. lappula*, *Sporobolus subulatus*, *Trachypogon spicatus*, *Trichoneura grandiglumis*, *Tristachya leucothrix*.

Biogeographically Important Taxa

(Coastal Belt element, Generic fynbos element, Isolated Lowland populations, Maputaland endemic, Northern distribution limit, Southern distribution limit)

Geoxylic Suffrutex: *Diospyros galpinii*.

Low Shrubs: *Indigofera williamsonii*, *Searsia kwazuluana*, *Stylosanthes fruticosa*.

Small Trees & Tall Shrubs: *Hyphaene coriacea*, *Ozoroa obovate*, *Searsia nebulosi*, *Synaptolepis kirkii*.

Woody Climber: *Dalbergia obovate*. Herbs: *Helichryopsis septentrionale*, *Helichrysum tongense*, *H. cymosum* subsp. *cymosum*, *Nidorella tongensis*, *Senecio ngoyanus*, *Vernonia natalensis*.

Megaherb: *Strelitzia nicolai*.

Succulent Herb: *Orbea longidens*.

Semi parasitic Herb: *Striga junodii*.

Graminoid: *Monocymbium ceresiiforme*

Endemic Taxa

(Generic fynbos element)

Herbs: *Helichrysum adenocarpum* subsp. *ammophila*, *Vahlia capensis* subsp. *vulgaris* var. *longifolia*.

Geophytic Herbs: *Asclepias gordon-grayae*, *Kniphofia leucocephala*, *Raphionacme lucens*.

Graminoid: *Restio zuluensis*.

Subtropical Freshwater Wetlands (AZf 6).

Distribution

This vegetation unit occurs on flat topography supporting low beds dominated by reeds, sedges and rushes, water-logged meadows or hillslope seepage wetlands. It occurs in the Limpopo, North-West, Gauteng, Mpumalanga, KwaZulu-Natal and Eastern Cape Provinces as well as in neighbouring Swaziland.

Conservation

The vegetation type is considered Least Threatened, with a conservation target of 24%. Some 40-50% is conserved in the Greater St Lucia Wetland Park, Kruger National Park, Ndumo Game Reserve, Tembe Elephant Park, Nylsvley. Approximately 4% has been transformed (largely by cultivation), but the pressure of local grazing and urban sprawl will result in the demise of many subtropical freshwater habitats. Disturbance leads to invasion of alien plants such as *Lantana camara*, *Chromolaena discolor* and *Melia azedarach* (on the edges of the rivers) and aquatic weeds such as *Eichhornia capensis*, *Pistia stratiotes* and *Salvinia molesta* (in waterbodies).

5.5.2 KwaZulu – Natal Vegetation Types (KZN VT)

The KZN VT was created to provide an accurate representation of the historical extent of the vegetation types present in KZN with the most current available information. A key issue of concern is our current lack of knowledge regarding the historical extents of both our wetland and forest biomes. Almost all vegetation mapping conducted currently only displays the current extent of the feature in question. As such, no true understanding as to rates of loss and or minimum required habitat areas required to ensure persistence can be accurately determined. This issue further influences our understanding of the grassland/savannah/bushland matrix within which these features reside. The KZN VT map has undergone several changes since the publication of the Mucina and Rutherford (2006) national vegetation types.

Ezemvelo KZN Wildlife has, in association with various government departments, NGOs, Working Groups and Forums, municipalities and parastatals, refined the KZN VT to develop an accurate representation of the extent of the vegetation types present. As a result of the finer scale mapping and classification, KZN VT map has in some cases identified new vegetation types and or subtypes within the vegetation types identified at national level. These changes have been peer reviewed and adopted by the National Vegetation Committee, and have been incorporated into the revised South African Vegetation map. At this time there has been no revision of the Mucina and Rutherford (2006) national vegetation types for this area, thus the Mucina and Rutherford (2006) national vegetation types, CB 1 and AZf 6 stands.

5.6 National Freshwater Ecosystem Priority Areas (NFEPA)

NFEPA was a three-year partnership project between South African National Biodiversity Institute (SANBI), CSIR, Water Research Commission (WRC), Department of Environmental Affairs (DEA), Department of Water Affairs (DWA), Worldwide Fund for Nature (WWF), South African Institute of Aquatic Biodiversity (SAIAB) and South African National Parks (SANParks) (**Van Deventer et al. 2010**). NFEPA map products provide strategic spatial priorities for conserving South Africa's freshwater ecosystems and supporting sustainable use of water resources. These strategic spatial priorities are known as Freshwater Ecosystem Priority Areas, or FEPAs.

FEPA maps and supporting information form part of a comprehensive approach to sustainable and equitable development of South Africa's scarce water resources. They provide a single, nationally consistent information source for incorporating freshwater ecosystem and biodiversity goals into 2 planning and decision-making processes. For integrated water resource management, the maps provide guidance on how many rivers, wetlands and estuaries, and which ones, should remain in a natural or near-natural condition to support the water resource protection goals of the National Water Act (Act No. 36 of 1998; RSA, 1998a). FEPA maps are therefore directly applicable to the National Water Act, feeding into Catchment Management Strategies, classification of water resources, reserve determination, and the setting and monitoring of resource quality objectives. FEPA maps are also directly relevant to the National Environmental Management: Biodiversity Act (Act No. 10 of 2004; RSA, 2004) (hereafter referred to as the Biodiversity Act), informing both the listing of threatened freshwater ecosystems and the process of bioregional planning provided for by this Act. FEPA maps support the implementation of the National Environmental Management: Protected Areas Act (Act No. 57 of 2003; RSA, 2003) (hereafter referred to as the Protected Areas Act) by informing the expansion of the protected area network. They also inform a variety of other policies and legislation that affect the management and conservation of freshwater ecosystems, including at the municipal level.

FEPAs are strategic spatial priorities for conserving freshwater ecosystems and supporting sustainable use of water resources. FEPAs were determined through a process of systematic biodiversity planning and were identified using a range of criteria for conserving ecosystems and associated biodiversity of rivers, wetlands and estuaries.

FEPAs are often tributaries and wetlands that support hard-working large rivers, and are an essential part of an equitable and sustainable water resource strategy. FEPAs need to stay in a good condition to manage and conserve freshwater ecosystems, and to protect water resources for human use. This does not mean that FEPAs need to be fenced off from human use, but rather that they should be supported by good planning, decision-making and management to ensure that human use does not impact on the condition of the ecosystem. The current and recommended condition for all river FEPAs is A or B ecological category. Wetland FEPAs that are currently in a condition lower than A or B should be rehabilitated to the best attainable ecological condition.

5.6.1 FEPA wetlands and / or rivers onsite

There are no FEPA Rivers on site but the entire site nearly comprises of Subtropical Freshwater Wetlands.

6. VEGETATION ON SITE

6.1 General Vegetation Overview of the site

The general vegetation across the site is dominated by alien vegetation and pioneer / primary successional vegetation species. The mangrove areas are dominated by white mangrove (*Avicennia marina*) interspersed with black mangrove (*Bruguiera gymnorrhiza*) and red mangrove (*Rhizophora mucronata*) individuals (Figure 1). The canopy of the trees that line the edges of the site along the harbour side are dominated by *Casuarina equisetifolia* and *Acacia karroo* trees (Figure 2). While the understory, apart from patches of alien vegetation such as *Lantana camara* and *Chromolaena odorata* (Figure 3), is predominantly indigenous and dominated by pioneer species such as *Grewia occidentalis*, *Psydrax obovata* and a number of *Rhoicissus* spp. (Figure 4). There are also a number of vines that are well established within the more indigenous stands of thicket, these include *Secamone alpini*, *Cynanchum ellipticum*, *Sarcostemma viminale* and *Rhoicissus tomentosa* (Figure 5).



Figure 1: The mangrove areas are dominated by white mangrove (*Avicennia marina*) interspersed with black mangrove (*Bruguiera gymnorrhiza*) and red mangrove (*Rhizophora mucronata*) individuals.



Figure 2: *Casuarina equisetifolia* and *Acacia karroo* line the edges of all the sites along the harbour.



Figure 3: *Lantana camara* (above) and *Chromolaena odorata* dominate large areas of Casuarina area and Harbour west.



Figure 4: The understory is predominantly indigenous and dominated by pioneer species such as (from left to right) *Grewia occidentalis*, *Psydrax obovata* and a number of *Rhoicissus* spp.



Figure 5: Well established vines include *Secamone alpini*, *Cynanchum ellipticum*, *Sarcostemma viminale* and *Rhoicissus tomentosa*

It is evident from the alien species composition and indigenous pioneer herbaceous and woody species present that the site is degraded, most notably due to a lack of environmental management (burning / mowing regimes, exclusion of fire, alien plant control) and illegal dumping of waste material (Figure 6).



Figure 6: Litter and illegal dumping, particularly found amongst the vegetation on Naval Island, Harbour West mainland and Casuarina area.

6.2 Vegetation description on Railyard North site

The Railyard North site is approximately 63ha in extent and the majority of the site is currently used to grow pine trees, and has a large wood chipping facility (Appendix A). The study site is bounded in the north by a large wetland system, and to the south and west by a large rail yard. There is drainage line the runs along the southern extent of the railway. It has been created to drain what would have once been a wetland system.

The plantation area is planted with *Pinus* sp. which make up the dominant canopy vegetation (Figure 7). The understory is very sparse and comprises of some alien vegetation such as *Psidium guajava* and *Schinus terebinthifolius* (Figure 7 and Figure 8), and pioneer indigenous vegetation such as *Trema orientalis*, *Osteospermum moniliferum*, *Phoenix reclinata*, *Allophylus natalensis* and *Searsia nebulosa* (Figure 9). There are also some forest floor fern species that include *Cheilanthes* sp. *Microsorium scolopendrium* and *Nephrolepis exaltata* (Figure 10).



Figure 7: *Pinus* sp. in background with *Schinus terebinthifolius* in foreground.



Figure 8: *Psidium guajava* .



Figure 9: *Pioneer indigenous vegetation such as Allophylus natalensis and Phoenix reclinata.*



Figure 10: Forest floor fern species that include *Cheilanthes* sp. and *Microsorium scolopendrium*.

The natural vegetation to the west of the wood chipper is dominated by *Acacia karroo* and *Acacia robusta* with a few large *Trema orientalis* individuals. The understory is dominated *Osteospermum moniliferum* and by creepers and climbers that seem to be smothering the sub canopy vegetation (Figure 11). The areas along the roads experience the most disturbance and thus the edge vegetation is comprised of pioneer vegetation and alien plants such as *Lantana camara*. There were some *Eulophia speciosa* (Orchidaceae) individuals in the understory vegetation, which are protected under Natal Ordinance of 1974 (Figure 12).



Figure 11: *Acacia robusta* with *Osteospermum moniliferum* in the foreground, and the understory, dominated by creepers and climbers that seem to be smothering the sub canopy vegetation.



Figure 12: The orchid *Eulophia speciosa*.

The vegetation that flanks the drainage line exhibits riparian vegetation species compositions, the large trees that are present include *Ficus sur*, *Strelitzia nicolai* and *Dalbergia armata* while the understory provides habitat to both alien and indigenous creepers. The wetland area is dominated by *Phragmites australis*. (Figure 13 and Figure 14).



Figure 13: *Ficus sur* (left), and *Phragmites australis* (right).



Figure 14: *Commelina bengalensis* and *Ipomoea cairica* and *Strelitzia nicolai*.

The more open areas of the site are very sandy and are dominated by a number of sedge species and *Searsia nebulosa*, *Osteospermum moniliferum* and *Helichrysum kraussii* (Figure 15).

The site exhibits signs of woody encroachment that is likely attributed to lack of fire management due to the proximity of the wood chipping facility.



Figure 15: *Searsia nebulosa* and *Osteospermum moniliferum* with *Acacia robusta* in the background.

6.3 Biodiversity Assessment

In terms of assessing the impacts of a proposed development on the receiving environment, it is important that the current state of the environment is assessed and the level at which it functions currently is considered and recorded.

Bearing this in mind that we have developed an assessment matrix which assists in determining the current biodiversity and conservation value of the various landscape (vegetation types) that were encountered during the field survey.

In addition we need to consider the biodiversity noteworthiness of the receiving environment (i.e. does the environment hold any rare species, protected species and unique landscape features) as well as

the functional integrity and future sustainability of the vegetation types in the immediate vicinity of the Road Upgrade. The final condition score is calculated by adding the Biodiversity noteworthiness score with the Functional Integrity and Sustainability score. It must be noted that the two scores are weighted 50%:50% respectively.

6.3.1 Biodiversity noteworthiness

In terms of the vegetation classifications that were identified from the aerial photography and ground-truthed on site, the following assessment was made in terms of the noteworthiness of the vegetation that occurs along the proposed development footprint.

Table 7. Biodiversity noteworthiness of the vegetation within the site

Biodiversity Noteworthiness	Scores				
	0	1	2	3	4
Diversity			✓		
Rarity	✓				
Conservation Status	✓				
Red Data Species					✓
Uniqueness / Special features		✓			
OVERALL VALUE	Total Score/number of categories is 7 / 5= 1.4				

6.3.2 Functional Integrity and Sustainability

The functional Integrity and sustainability speaks to the impact of the proposed activity on the receiving environment and the likelihood that it will be of significance and whether there are significant mitigation and or amelioration measures that are required to be put in place to ensure that the impacts are manageable and will not prove deleterious to the vegetation type as a whole, which falls within the current proposed area of disturbance.

Table 8. Future Integrity and viability of the vegetation within the site

Integrity & Future Viability	Scores				
	0	1	2	3	4
Buffer		✓			
Connectivity			✓		
Alteration	✓				
Invasive/pioneers	✓				
Size					✓
OVERALL VALUE	Total Score/number of categories is 7 / 5= 1.4				

The biodiversity noteworthiness of the vegetation has a score of **1.4**, this is deemed to be **moderately low**. The future integrity and viability value that the various vegetation type is considered **moderately low**, with a score of **1.4**. The final condition score of this site is **1.4** which indicates that the site is functioning at a **moderately low** level

The reason this site retains a relatively high viability and noteworthiness score is because of its size and a small margin of riparian species growing on the drain. There is potential for rehabilitation but due to the nature of the area being entirely surrounded by industry it is unlikely that this will be feasible. Of all the sites assessed, it is the most probable area to be developed without further deleterious effects to surrounding wetlands, mangroves and swamp forests.

7. SUMMARY OF FINDINGS

Having undertaken a detailed assessment of the proposed development footprint the following findings were noted.

- The majority of the site has been exposed to intensive forestry;
- As a result, ground cover/ basal vegetation is minimal resulting in some erosion and loss of topsoil;
- The vegetation assemblage has become dominated by alien invasive species and pioneer and / or ruderal indigenous plant species.
- Illegal dumping of general waste has further degraded the floral composition and potential of this landscape.

8. RECOMMENDATIONS AND CONCLUSIONS

The site is considered to be degraded based on the presence and abundance of alien and pioneer species. The species that occur within the site (apart from the small strip of riparian vegetation) are primarily alien and indigenous pioneer forms, considered to be secondary successional communities. The indication is that most of the tall woody vegetation (Casuarina and Pine) was planted and the shorter component appears to have established and proliferated due to the consequence of the exclusion of fire due to the proximity of the site to Harbour Terminals, Wood chipping plants, Smelters and general industry.

It is important to mention, due to time constraints and the sampling methodology, additional species may have been overlooked during our field survey due to the plant life history characteristics exhibited by certain plant species. Some species may not have emerged due to the time of the year, the amount of rainfall or requisite temperature (heat units) to force emergence. However, it is our opinion that the vegetation that was recorded provides enough information in order for the specialist to make inferences and extrapolations as to the quality, and the likely impacts associated with a development of this nature.

Possible mitigation for construction:

- The clearing of vegetation during construction, the operation of earth moving equipment, machines and vehicles in and next to the footprint, the creation of stockpiles and increased movement and activity by people (including possibly hand digging) creates opportunities for alien plant establishment. Alien plant management should be exercised to prevent further spread.
- Checks must be carried out at regular intervals to identify areas where erosion is occurring. Appropriate remedial action, including the rehabilitation of the eroded areas should be undertaken;
- If possible, the development footprint should avoid destroying and removing the more favourable indigenous plant species. ? Relocation of protected species *Eulophia speciosa*?
- If they are required to be removed, they should be transplanted elsewhere on site so that they may re-establish.

- As the site is predominantly alien and pioneer vegetation with bare ground, dust will be an issue, during the construction phase. If water carts are required for dust mitigation, it is likely that the excess water may promote recolonization of natural vegetation surrounding the proposed development footprint

In conclusion we would support the proposed development.

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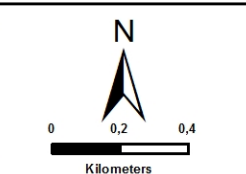
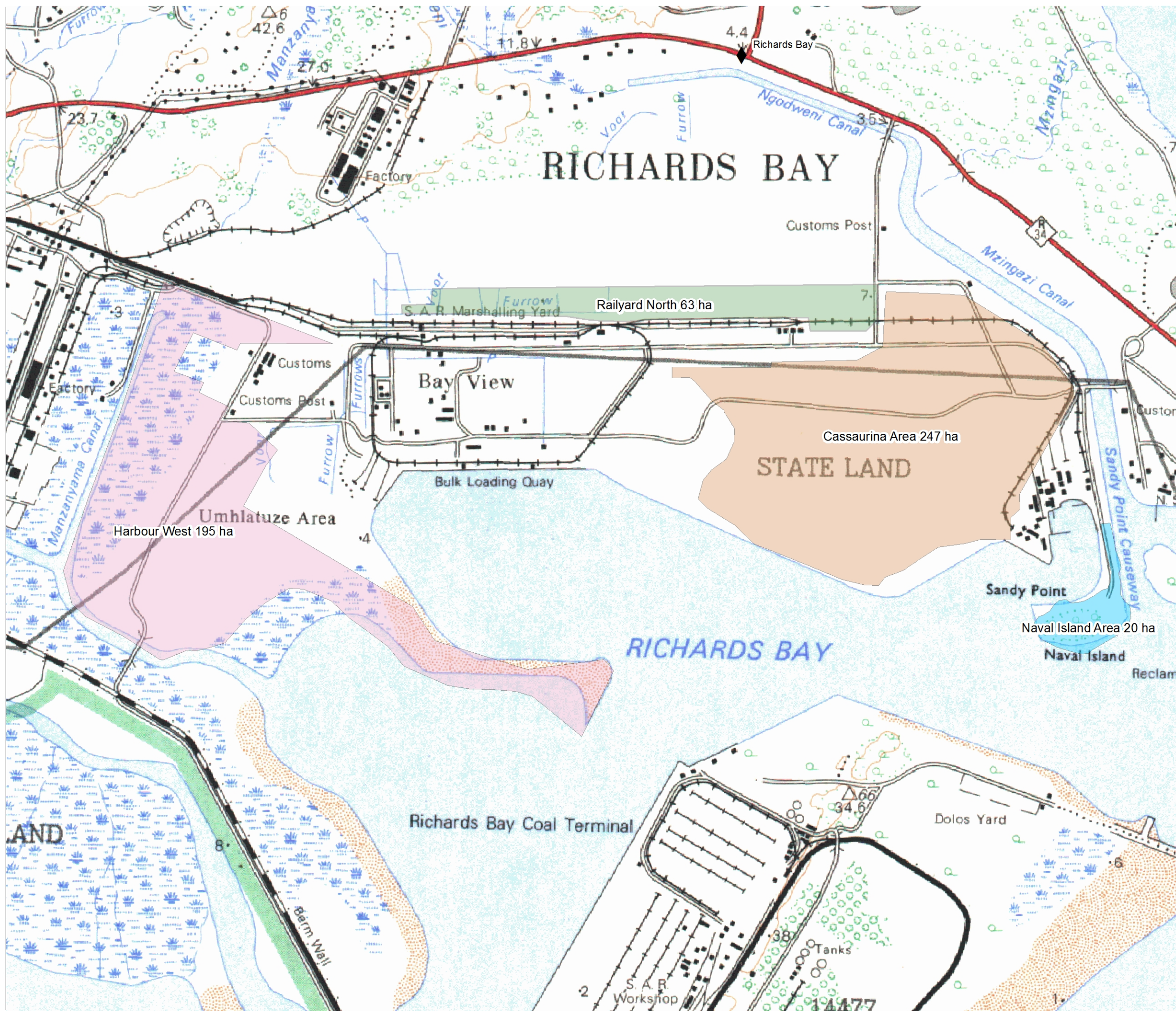
APPENDIX 1: AERIAL AND LOCALITY MAPS

**TRANSNET
ECOLOGICAL**

**LOCALITY MAP
1:50 000**

Legend

- Railyard North
- Harbour West
- Casaurina Area
- Naval Island



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TRANSNET ECOLOGICAL

AERIAL MAP

Legend

- Railyard North
- Harbour West
- Cassaurina Area
- Naval Island

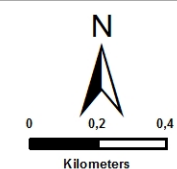
Harbour West 195 ha

Railyard North 63 ha

Cassaurina Area 247 ha

Naval Island Area 20 ha

Richards Bay



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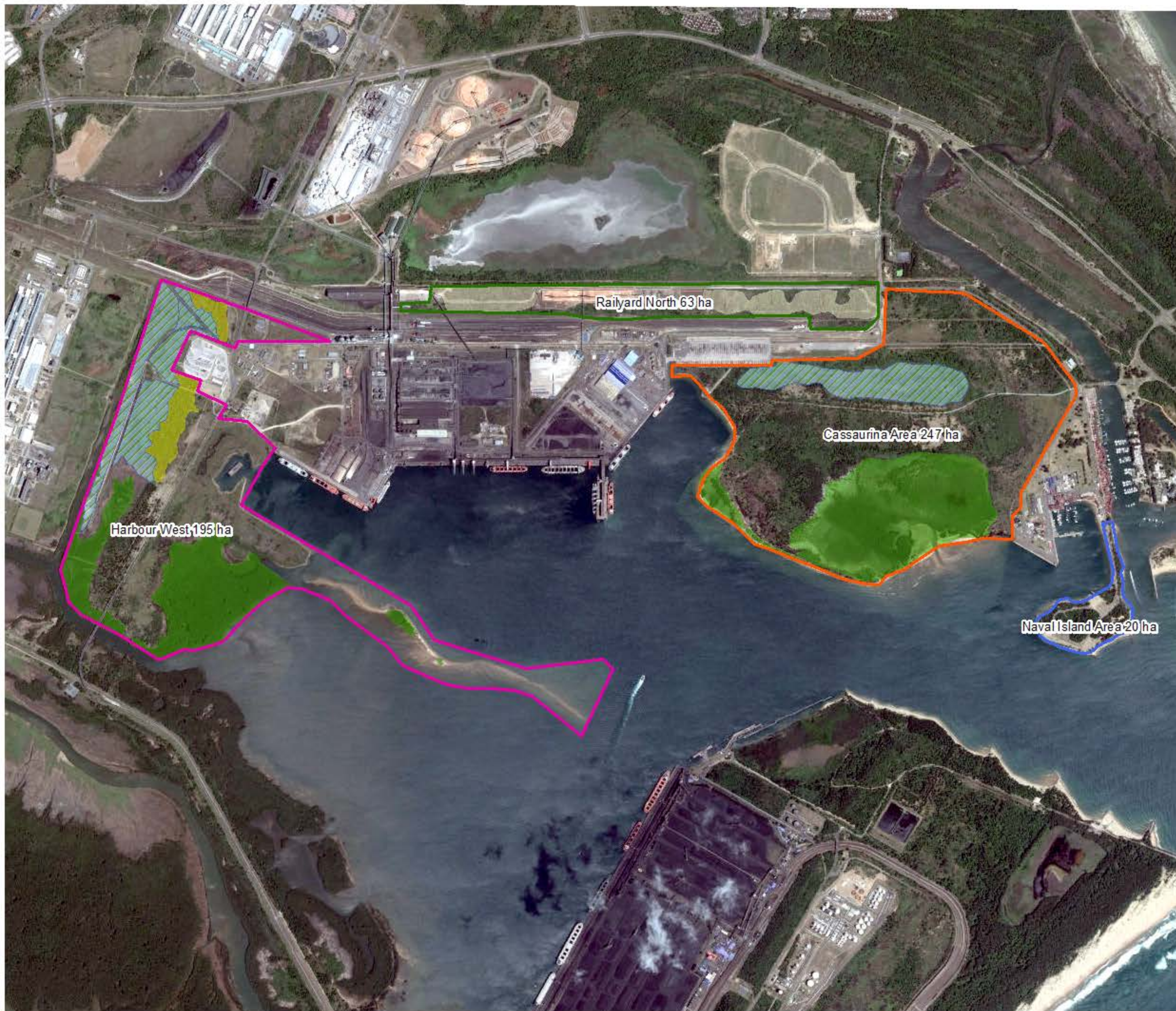
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TRANSNET ECOLOGICAL

VEGETATION AREA MAP

Legend

- Railyard North
- Harbour West
- Casaurina Area
- Naval Island
- Wetlands
- Plantation
- Swamp Forest
- Mangroves



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Kilometre

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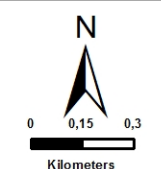
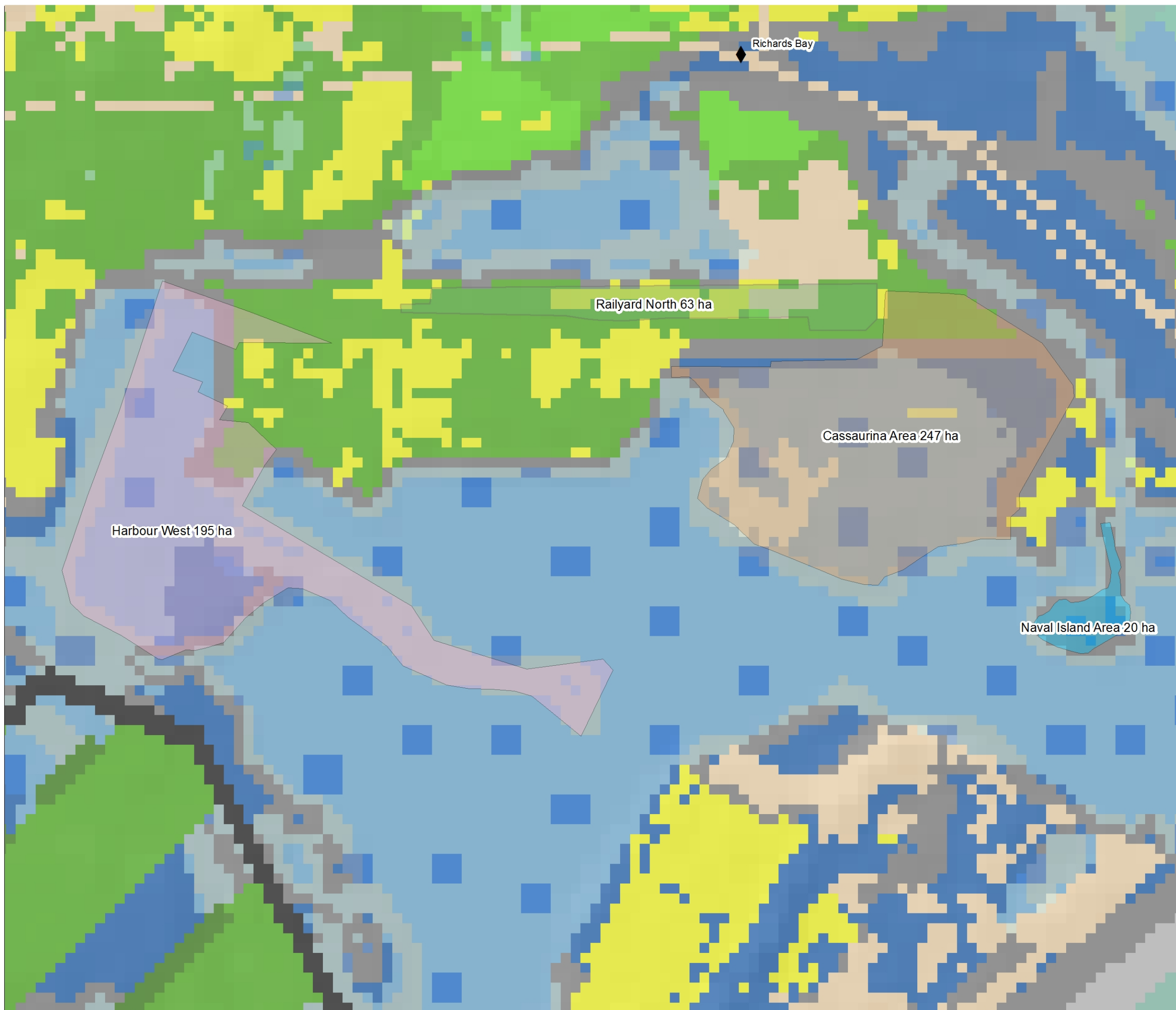
APPENDIX 2: CBA MAP

TRANSNET ECOLOGICAL

CRITICAL BIODIVERSITY AREA MAP

Legend

- Railyard North
- Harbour West
- Casaurina Area
- Naval Island
- CBA Irreplaceable Terrestrial
- CBA Optimal Terrestrial
- CBA Irreplaceable Aquatic
- ESA Optimal Aquatic
- ESA Terrestrial
- Transformed
- Natural land



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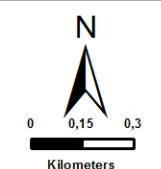
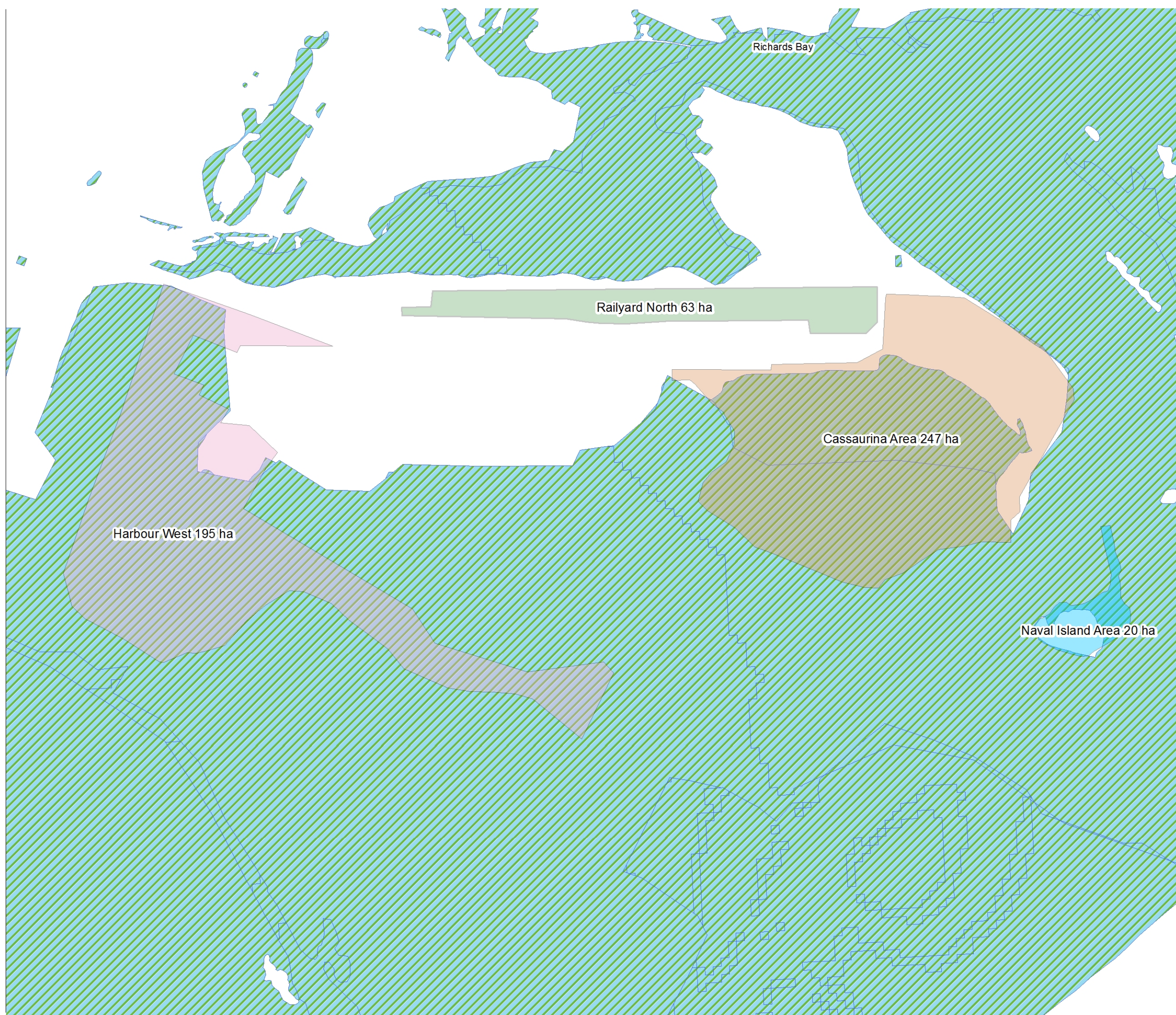
APPENDIX 3: FEPA WETLANDS AND RIVERS MAP

TRANSNET ECOLOGICAL

NFEPA WETLANDS MAP

Legend

- Railyard North
- Harbour West
- Casaurina Area
- Naval Island
- NFEPA wetlands



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APPENDIX 4: SPECIES LIST

Species name	Common name	Status	Growth form	Casuarina Area	Harbour West	Railyard North	Naval Island
<i>Abildgaardia ovata</i> (Burm.f.) Kral		Indigenous	Sedge	x	x	x	x
<i>Abrus laevigatus</i> E.Mey.		Indigenous	Creeper	x	x	x	x
<i>Abrus precatorius</i> L. subsp. <i>africanus</i> Verdc.		Indigenous	Herb	x	x	x	x
<i>Abutilon grantii</i> A.Meeuse		Indigenous	Herb	x	x	x	x
<i>Acacia karroo</i> Hayne	Sweet thorn	Indigenous	Tree	x	x	x	x
<i>Acacia robusta</i> Burch. subsp. <i>robusta</i>	Splendid acacia	Indigenous	Tree	x	x	x	x
<i>Aeraria</i> Müll.Arg	Thorny false nettle	Indigenous	Tree	x	x	x	x
<i>Acetosa sagittata</i> Thunb.	Potato Vine	Indigenous	Shrub	x	x	x	x
<i>Agrostis stolonifera</i> L	Creeping bent grass	Indigenous	Grass	x	x	x	x
<i>Albizia adianthifolia</i> (Schum.) W.Wight	Flat crown	Indigenous	Tree	x	x	x	x
<i>Allophylus africanus</i> P Beauv.	Witbos	Indigenous	Tree	x	x	x	x
<i>Allophylus natalensis</i> Sond.	Dune false Currant	Indigenous	Tree	x	x	x	x
<i>Androcymbium eucomoides</i> Sweet		Indigenous	Tree	x	x	x	x
<i>Andropogon gayanus</i> Kunth	Snow flake grass	Indigenous	Grass	x	x	x	x
<i>Aneilema aequinoctiale</i> (P.Beauv.) Loudon	Blue Stem	Indigenous	Grass	x	x	x	x
<i>Arctotheca populifolia</i> (P.J.Bergius) Norl.		Indigenous	Herb	x	x	x	x
<i>Aristea abyssinica</i> Pax	Beach Daisy	Indigenous	Herb	x	x	x	x
<i>Aristida junciformis</i> Trin. & Rupr.	Gongoni	Indigenous	Grass	x	x	x	x
<i>Asparagus falcatus</i> L. var. <i>ternifolius</i> (Baker) Jessop		Protected	Climber	x	x	x	
<i>Asparagus setaceus</i> (Kunth) Jessop		Protected	Climber	x	x	x	x
<i>Asplenium monanthes</i> L.		Indigenous	Fern	x	x	x	

<i>Asystasia gangetica</i> (L.) T.Anderson subsp. <i>micrantha</i> (Nees) Ensermu	Creeping Foxglove	Indigenous	Herb	x	x	x	x
<i>Avicennia marina</i>	White mangrove	Protected	Tree	x	x	x	
<i>Barleria meyeriana</i> Nees	Meyer's bushviolet	Indigenous	Herb	x	x	x	x
<i>Berkheya speciosa</i> (DC.) O.Hoffm. subsp. <i>speciosa</i> .		Indigenous	Herb	x	x	x	x
<i>Bidens pilosa</i> L.	Black jack	Alien	Herb	x	x	x	x
<i>Blechnum australe</i> L		Indigenous	Fern	x	x	x	
<i>Brachylaena discolor</i> DC	Silver oak	Indigenous	Tree	x	x	x	x
<i>Brachylaena ilicifolia</i> (Lam.) Phillips		Indigenous	Tree	x	x		
<i>Bridelia micrantha</i> (Hochst.) Baill.	Mitzeerie	Indigenous	Tree	x	x	x	x
<i>Bruguiera gymnorrhiza</i>	Black mangrove	Protected	Tree	x	x	x	
<i>Buchnera</i> sp.		Indigenous	Fern	x	x	x	
<i>Bulbostylis hispidula</i> (Vahl) R.W. Haines		Indigenous	Sedge	x	x	x	x
<i>Canavalia bonariensis</i> Lindl.		Alien	Herb	x	x	x	x
<i>Canavalia rosea</i> (Sw.) DC.		Alien	Herb	x	x	x	x
<i>Canna indica</i> L.	Canna	Alien	Herb	x	x	x	x
<i>Canthium inerme</i> (L.f.) Kuntze	Turkey berry	Indigenous	Tree	x	x	x	x
<i>Canthium kuntzeanum</i> Bridson		Indigenous	Tree	x	x	x	x
<i>Carex cognata</i> Kunth		Indigenous	Herb	x	x	x	x
<i>Carex zuluensis</i> C.B.Clarke		Indigenous	Herb	x	x	x	x
<i>Carissa macrocarpa</i> (Eckl.) A.DC.	Natal plum	Indigenous	Tree	x	x	x	x
<i>Carpobrotus dimidiatus</i> (Haw.) L.Bolus	Natal sour fig	Indigenous	Herb	x	x	x	x
<i>Casuarina equisetifolia</i> L.		Alien	tree	x	x	x	x
<i>Catharanthus roseus</i> (L.) G.Don	Madagascar rosy periwinkle	Alien	Herb	x	x	x	x
<i>Catunaregam spinosa</i> (Thunb.) Tirveng	Mountain pomegranate	Alien	Tree	x	x	x	x
<i>Centella asiatica</i> (L.) Urban	Gotu Kola	Alien	Herb	x	x	x	x

<i>Chaenostoma floribundum</i> Benth.		Indigenous	Herb	x	x	x	x
<i>Chamaecrista mimosoides</i> (L.)	Dwarf cassia	Indigenous	Herb	x	x	x	x
<i>Chamaecrista plumosa</i> E.Mey. var. <i>plumosa</i> .		Indigenous	Herb	x	x	x	x
<i>Cheilanthes viridis</i> (Forssk.) Sw. var. <i>viridis</i>		Indigenous	Fern	x	x	x	
<i>Chironia baccifera</i> L.	Christmas berry	Indigenous	Herb	x	x	x	x
<i>Chironia purpurascens</i> (E.Mey.) Benth. & Hook.f.		Indigenous	Herb	x	x	x	x
<i>Chloris gayana</i> Kunth	Rhodes grass	Indigenous	Grass	x	x	x	x
<i>Christella buchananii</i> (Schelpe) J.P.Roux		Indigenous	Fern	x	x	x	
<i>Chromolaena odorata</i> (L.) R.M.King & H.Rob.	Trifid weed	Alien	Herb	x	x	x	x
<i>Cissampelos mucronata</i> A.Rich.		Indigenous	Climber	x	x	x	x
<i>Cissampelos torulosa</i> E.Mey. ex Harv. & Sond.	Kidney-leaf	Indigenous	Climber	x	x	x	x
<i>Cnestis polyphylla</i> Lam.	Itch-Pod	Indigenous	Creeper	x	x	x	x
<i>Colchicum eucomoides</i> (Jacq.) J.C.Manning & Vinn. H	Green Men-in-a-boat	Protected	Bulb	x	x	x	
<i>Commelina africana</i> L.	Yellow wandering jew	Indigenous	Herb	x	x	x	x
<i>Commelina erecta</i> L.	Slender day flower	Indigenous	Herb	x	x	x	x
<i>Conostomium natalense</i> var. <i>natalense</i> Bremek.	Wild Pentas	Indigenous	Herb	x	x	x	x
<i>Crocosmia aurea</i> (Pappe ex Hook.) Planch.	Falling Stars	Protected	Bulb	x	x	x	
<i>Crotalaria macrocarpa</i> E.Mey. subsp. <i>macrocarpa</i> .	Rattlebox	Indigenous	Herb	x	x	x	x
<i>Crotalaria natalensis</i> Baker f.	Rattlebox	Indigenous	Herb	x	x	x	x
<i>Cryptocarya myrtifolia</i> Stapf		Indigenous	Tree	x	x	x	x
<i>Cuscuta campestris</i> Yunck.		Indigenous	Herb	x	x	x	x
<i>Cyanotis speciosa</i> (L.f.) Hassk.		Indigenous	Herb	x	x	x	x
<i>Cycnium racemosum</i> Benth.		Indigenous	Climber	x	x	x	x

<i>Cymbopogon validus</i> (Stapf) Stapf ex Burtt Davy	Giant Terpentine Grass	Indigenous	Grass	x	x	x	x
<i>Cynanchum natalitium</i> Schltr.		Indigenous	Creeper	x	x	x	x
<i>Cynanchum obtusifolium</i> L.f.	Natal Dog-wort	Indigenous	Climber	x	x	x	x
<i>Cyperus dives</i> Delile		Indigenous	Sedge	x	x	x	x
<i>Cyperus dubius</i> Rottb.		Indigenous	Sedge	x	x	x	x
<i>Cyperus obtusiflorus</i> Vahl var. <i>obtusiflorus</i>		Indigenous	Sedge	x	x	x	x
<i>Cyperus papyrus</i> L.		Indigenous	Sedge	x	x	x	x
<i>Cyperus prolifer</i> Lam.		Indigenous	Sedge	x	x	x	x
<i>Cyperus rotundus</i> L. subsp. <i>rotundus</i>	Purple Nut Sedge	Indigenous	Sedge	x	x	x	x
<i>Cyperus rupestris</i> Kunth var. <i>rupestris</i>		Indigenous	Sedge	x	x	x	x
<i>Cyperus solidus</i> Kunth		Indigenous	Sedge	x	x	x	x
<i>Dactyloctenium australe</i> Steud.	Sweet Smother Grass	Indigenous	Sedge	x	x	x	x
<i>Dalbergia armata</i> E.Mey.	Hluhluwe climber	Indigenous	Climber	x	x	x	x
<i>Desmodium dregeanum</i> Benth.	Marsh Desmodium	Indigenous	Herb	x	x	x	x
<i>Desmodium incanum</i> DC.		Indigenous	Herb	x	x	x	x
<i>Desmodium setigerum</i> (E.Mey.) Benth. ex Harv.	Sweet hearts	Alien	Herb	x	x	x	x
<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	Sickle bush	Indigenous	Tree	x	x	x	x
<i>Dicliptera clinopodia</i> Nees		Indigenous	Herb	x	x	x	x
<i>Digitaria eriantha</i> Steud	Pongola grass	Indigenous	Grass	x	x	x	x
<i>Diheteropogon amplectens</i> (Nees) Clayton var. <i>amplectens</i>		Indigenous	Grass	x	x	x	x
<i>Diospyros natalensis</i> (Harv.) Brenan subsp. <i>natalensis</i>		Indigenous	Tree	x	x	x	x
<i>Dissotis canescens</i> (E.Mey. ex R.A.Graham) Hook.f.	Purple Dissotis	Indigenous	Herb	x	x	x	x
<i>Dumasia villosa</i> DC. var. <i>villosa</i>		Indigenous	Climber	x	x	x	x

<i>Echinochloa pyramidalis</i> (Lam.) Hitchc. & Chase		Indigenous	Grass	x	x	x	x
<i>Eleocharis limosa</i> (Schrad.) Schult		Indigenous	Sedge	x	x	x	x
<i>Eragrostis chloromelas</i> Steud.	Boer love grass	Indigenous	Grass	x	x	x	x
<i>Eragrostis cilianensis</i> (All.) Vignolo ex Janch.		Indigenous	Grass	x	x	x	x
<i>Eragrostis ciliaris</i> (L.) R.Br.	Woolly Love Grass	Indigenous	Grass	x	x	x	x
<i>Eragrostis gummiflua</i> Nees		Indigenous	Grass	x	x	x	x
<i>Eragrostis superba</i> Peyr.		Indigenous	Grass	x	x	x	x
<i>Eriosema psoraleoides</i> (Lam.) G.Don x E. <i>salignum</i> E.Mey.		Indigenous	Herb	x	x	x	x
<i>Erythrina lysistemon</i> Hutch.	Coral tree	Indigenous	Tree	x	x	x	x
<i>Ethulia conyzoides</i> L.f. subsp. <i>conyzoides</i>		Indigenous	Herb	x	x	x	x
<i>Eucalyptus camaldulensis</i> Dehnh.		Alien	Tree	x	x	x	x
<i>Eucalyptus grandis</i> W.Hill ex Maiden	Rose gum	Alien	Tree	x	x	x	x
<i>Eugenia capensis</i> (Eckl. & Zeyh.) Sond. subsp. <i>capensis</i>	Myrtle	Protected	Herb	x	x	x	x
<i>Eugenia natalitia</i> Sond.	Dune myrtle	Protected	Tree	x	x	x	x
<i>Eulophia horsfallii</i> (Bateman) Summerh.		Protected	Bulb	x	x	x	
<i>Eulophia speciosa</i>		Protected	Bulb	x	x	x	
<i>Ficinia laciniata</i> (Thunb.) Nees		Indigenous	Sedge	x	x	x	x
<i>Ficus sur</i> Forssk	Cape fig	Indigenous	Tree	x	x	x	x
<i>Ficus trichopoda</i> Baker	Swamp fig	Protected	Tree	x	x	x	x
<i>Fimbristylis complanata</i> (Retz.) Link		Indigenous	Sedge	x	x	x	x
<i>Fimbristylis obtusifolia</i> (Lam.) Kunth		Indigenous	Sedge	x	x	x	x
<i>Gazania rigens</i> (Burm.f.) Roessler		Indigenous	Herb	x	x	x	x
<i>Gnidia burchellii</i> (Meisn.) Gilg		Indigenous	Herb	x	x	x	x

<i>Gnidia calocephala</i> (C.A.Mey.) Gilg		Indigenous	Herb	x	x	x	x
<i>Gnidia kraussiana</i> Meisn. var. <i>kraussiana</i>	Yellow heads	Indigenous	Herb	x	x	x	x
<i>Gomphocarpus physocarpus</i> E.Mey.	Milkweed	Indigenous	Herb	x	x	x	x
<i>Grewia pondoensis</i> Burret		Indigenous	Tree	x	x	x	x
<i>Gymnosporia nemorosa</i> (Eckl. & Zeyh.) Szyszyl.	Spike-thorn	Indigenous	Tree	x	x	x	x
<i>Halleria lucida</i> L.	Tree Fuchsia	Indigenous	Tree	x	x	x	x
<i>Helichrysum aureonitens</i> Sch.Bip.	Golden everlasting	Indigenous	Herb	x	x	x	x
<i>Helichrysum aureum</i> (Houtt.) Merr. var. <i>aureum</i>		Indigenous	Herb	x	x	x	x
<i>Helichrysum auriceps</i> Hilliard		Indigenous	Herb	x	x	x	x
<i>Helichrysum decorum</i> DC.		Indigenous	Herb	x	x	x	x
<i>Helichrysum kraussii</i> Sch.Bip.		Indigenous	Herb	x	x	x	x
<i>Helinus integrifolius</i> (Lam.) Kuntze		Indigenous	Herb	x	x	x	x
<i>Hewittia</i> sp.		Indigenous	Herb	x	x	x	x
<i>Hibiscus aethiopicus</i> L. var. <i>aethiopicus</i>	Common Dwarf Wild Hibiscus	Indigenous	Herb	x	x	x	x
<i>Hibiscus calyphyllus</i> Cav.	Large Yellow Wild Hibiscus	Indigenous	Shrub	x	x	x	x
<i>Hibiscus surattensis</i> L.		Indigenous	Herb	x	x	x	x
<i>Hibiscus tiliaceus</i> L. subsp. <i>tiliaceus</i>	Coast hibiscus	Indigenous	Shrub	x	x	x	x
<i>Hibiscus trionum</i> L.	Bladder hibiscus	Alien	Creeper	x	x	x	x
<i>Hydrocotyle bonariensis</i> Lam.		Alien	Herb	x	x	x	x
<i>Hyparrhenia cymbaria</i> (L.) Stapf	Boat Thatching Grass	Indigenous	Grass	x	x	x	x
<i>Hypoxis angustifolia</i> Lam. var. <i>angustifolia</i>		Indigenous	Herb	x	x	x	x
<i>Imperata cylindrica</i> (L.) Raeusch.	Cotton wool grass	Indigenous	Grass	x	x	x	x
<i>Indigofera dimidiata</i> Vogel ex Walp.	Trifoliate Indigofera	Indigenous	Herb	x	x	x	x
<i>Indigofera spicata</i> Forssk. var. <i>spicata</i>	Creeping indigo	Indigenous	Herb	x	x	x	x

<i>Indigofera velutina</i> E.Mey.		Indigenous	Herb	x	x	x	x
<i>Ipomoea alba</i> L.	Moon flower	Alien	Herb	x	x	x	x
<i>Ipomoea cairica</i> (L.) Sweet var. <i>cairica</i>	Coast Morning Glory	Alien	Creeper	x	x	x	x
<i>Ipomoea ficifolia</i> Lindl.	Morning Glory	Indigenous	Creeper	x	x	x	x
<i>Ipomoea obscura</i> (L.) Ker Gawl. var. <i>obscura</i>	Morning Glory	Indigenous	Creeper	x	x	x	x
<i>Ipomoea pes-caprae</i> (L.) R.Br. subsp. <i>brasiliensis</i> (L.)	Beach Morning Glory	Alien	Creeper	x	x	x	x
<i>Ipomoea purpurea</i> (L.) Roth	Common Morning Glory	Alien	Creeper	x	x	x	x
<i>Ischaemum fasciculatum</i> Brongn.		Indigenous	Grass	x	x	x	x
<i>Isoglossa woodii</i> C.B.Clarke		Indigenous	Herb	x	x	x	x
<i>Juncus kraussii</i> Hochst.		Indigenous	Sedge	x	x	x	x
<i>Justicia campylostemon</i> (Nees) T.Anderson		Indigenous	Herb	x	x	x	x
<i>Justicia flava</i> (Vahl) Vahl		Indigenous	Herb	x	x	x	x
<i>Justicia protracta</i> (Nees) T.Anderson subsp. <i>protracta</i>		Indigenous	Herb	x	x	x	x
<i>Lablab purpureus</i> (L.) Sweet		Indigenous	Herb	x	x	x	x
<i>Lactuca indica</i> L.	Wild lettuce	Indigenous	Herb	x	x	x	x
<i>Lantana camara</i> L.	Tick berry	Alien	Shrub	x	x	x	x
<i>Laportea peduncularis</i> (Wedd.)		Indigenous	Herb	x	x	x	x
<i>Launaea sarmentosa</i> (Willd.) Sch.Bip. ex Kuntze		Indigenous	Herb	x	x	x	x
<i>Leersia hexandra</i> Sw.		Indigenous	Grass	x	x	x	x
<i>Lippia javanica</i> (Burm.f.) Spreng	Lemon bush	Indigenous	Herb	x	x	x	x
<i>Lobelia coronopifolia</i> L.	Wild Lobelia	Indigenous	Tree	x	x	x	x
<i>Ludwigia octovalvis</i> (Jacq.) P.H.Raven	Raven primrose willow	Indigenous	Herb	x	x	x	x
<i>Lycopodium cernuum</i> L.	Stag Horn	Indigenous	Fern	x	x	x	

<i>Macaranga capensis</i> (Baill.) Benth. ex Sim var. <i>capensis</i>	Mock Poplar	Indigenous	Tree	x	x	x	x
<i>Manilkara discolor</i> (Sond.) J.H.Hemsl.	Milk Berry	Indigenous	Tree	x	x	x	x
<i>Maytenus procumbens</i> (L.f.) Loes.	Dune Koko Tree	Indigenous	Tree	x	x	x	x
<i>Melia azedarach</i> L.	Syringa	Alien	Tree	x	x	x	x
<i>Melinis repens</i> (Willd.) Zizka subsp. <i>repens</i>	Natal grass	Indigenous	Grass	x	x	x	x
<i>Microsorium scolopendria</i> (Burm.f.) Copel.	Wart Ferns	Indigenous	Fern	x	x	x	x
<i>Mimusops caffra</i> E.Mey. ex A.DC.	Coastal Red Milkwood	Protected	Tree	x	x	x	x
<i>Miscanthus ecklonii</i> (Nees) Mabb.		Indigenous	Grass	x	x	x	x
<i>Momordica foetida</i> Schumach.		Indigenous	Climber	x	x	x	x
<i>Monocymbium ceresiforme</i> (Nees) Stapf		Indigenous	Grass	x	x	x	x
<i>Monopsis stellarioides</i> (C.Presl) Urb. subsp. <i>stellarioides</i>		Indigenous	Herb	x	x	x	x
<i>Morella serrata</i> (Lam.) Killick		Indigenous	Tree	x	x	x	x
<i>Nidorella auriculata</i> DC.		Indigenous	Herb	x	x	x	x
<i>Nidorella undulata</i> (Thunb.) Sond. ex Harv.		Indigenous	Herb	x	x	x	x
<i>Oldenlandia herbacea</i> (L.) Roxb. var. <i>herbacea</i>		Indigenous	Herb	x	x	x	x
<i>Oplismenus hirtellus</i> (L.) P.Beauv.	Basket grass	Indigenous	grass	x	x	x	x
<i>Ornithogalum tenuifolium</i> F.Delaroche subsp. <i>tenuifolium</i>	Grass Chink	Protected	Bulb	x	x	x	
<i>Osteospermum monilifera</i> (L.) T. Norl	Tick berry	Indigenous	Shrub	x	x	x	x
<i>Oxalis corniculata</i> L.	Creeping woodsorrel	Alien	Herb	x	x	x	x
<i>Oxygonum dregeanum</i> Meisn. subsp. <i>Dregeanum</i>		Indigenous	Herb	x	x	x	x
<i>Panicum ecklonii</i> Nees	Small panicum.	Indigenous	Grass	x	x	x	x

<i>Panicum maximum</i> Jacq.	Mexican panicgrass	Alien	Grass	x	x	x	x
<i>Panicum repens</i> L.	Torpedograss	Alien	Grass	x	x	x	x
<i>Paspalum distichum</i> L.	Knotgrass	Alien	Grass	x	x	x	x
<i>Paspalum scrobiculatum</i> L.	Kodo Millet	Indigenous	Grass	x	x	x	x
<i>Passiflora subpeltata</i> Ortega	White passionflower	Alien	Climber	x	x	x	x
<i>Pavetta bowkeri</i> Harv.	Kei White Bauhinia	Indigenous	Tree	x	x	x	x
<i>Pavetta lanceolata</i> Eckl.	Weeping Brides bush	Indigenous	Tree	x	x	x	x
<i>Pavonia burchellii</i> (DC.) R.A.Dyer	Dainty Pavonia	Indigenous	Herb	x	x	x	x
<i>Pentanisia prunelloides</i> (Klotzsch ex Eckl. & Zeyh.) Walp. subsp. <i>prunelloides</i>		Indigenous	Herb	x	x	x	x
<i>Pergularia daemia</i> (Forssk.) Chiov. subsp. <i>daemia</i>	Trellis vine	Indigenous	Herb	x	x	x	x
<i>Persicaria decipiens</i> (R.Br.) K.L.Wilson		Indigenous	Herb	x	x	x	x
<i>Phoenix reclinata</i> Jacq.	Date Palm	Indigenous	Palm	x	x	x	x
<i>Phragmites australis</i> (Cav.) Steud.	Reed Grass	Indigenous	Grass	x	x	x	x
<i>Pilogyne parvifolia</i> (Cogn.) W.J.de Wilde & Duyfjes		Indigenous	Herb	x	x	x	x
<i>Pinus elliottii</i> Engelm. var. <i>elliottii</i>		Alien	Tree	x	x	x	x
<i>Pisonia aculeata</i> L.	Four o'clock flower	Alien	Herb	x	x	x	x
<i>Pleurostyliia capensis</i> (Turcz.) Loes.	Bastard Saffron	Indigenous	Herb	x	x	x	x
<i>Premna mooiensis</i> (H.Pearson) W.Piep.	Skunk-bush	Indigenous	Shrub	x	x	x	x
<i>Psidium guajava</i> L.	Guava tree	Alien	Tree	x	x	x	x
<i>Psychotria capensis</i> (Eckl.) Vatke subsp. <i>capensis</i>	Black bird-berry	Indigenous	Tree	x	x	x	x
<i>Pteridium aquilinum</i> (L.) Kuhn subsp. <i>aquilinum</i>	Bracken fern	Alien	Fern	x	x	x	x
<i>Pycnostachys reticulata</i> (E.Mey.) Benth.	Blue soldier salvia	Indigenous	Shrub	x	x	x	x
<i>Pycreus macranthus</i> (Boeck.) C.B.Clarke		Indigenous	Shrub	x	x	x	x

<i>Pycneus pelophilus</i> (Ridl.) C.B.Clarke		Indigenous	Shrub	x	x	x	x
<i>Pycneus polystachyos</i> (Rottb.) P.Beauv. var. <i>polystachyos</i>		Indigenous	Sedge	x	x	x	x
<i>Ranunculus multifidus</i> Forssk.	African Buttercup	Indigenous	Herb	x	x	x	x
<i>Rhinacanthus gracilis</i> Klotzsch var. <i>gracilis</i>		Indigenous	Herb	x	x	x	x
<i>Rhizophora mucronata</i>	Red mangrove	Protected	Tree	x	x		
<i>Rubia cordifolia</i> L. subsp. <i>conotricha</i> (Gand.) Verdc.		Indigenous	Herb	x	x	x	x
<i>Rubus flagellaris</i> Willd.	Common dewberry	Alien	Shrub	x	x	x	x
<i>Rubus fruticosus</i> L.	Blackberry	Alien	Shrub	x	x	x	x
<i>Scabiosa columbaria</i> L.	Pink Mist	Indigenous	Herb	x	x	x	x
<i>Scadoxus multiflorus</i> (Martyn) Raf. subsp. <i>katharinae</i> (Baker) Friis & Nordal	Blood lily	Protected	Bulb	x	x	x	
<i>Scaevola plumieri</i> (L.) Vahl		Indigenous	Herb	x	x	x	x
<i>Schinus terebinthifolius</i> Raddi	Brazilian pepper tree	Alien	Tree	x	x	x	x
<i>Schistostephium</i> <i>rotundifolium</i> (DC.) Fenzl ex Harv.		Indigenous	Herb	x	x	x	x
<i>Schoenoplectus scirpoides</i> (Schrad.) Browning		Indigenous	Sedge	x	x	x	x
<i>Schoenoplectus</i> <i>senegalensis</i> (Hochst. ex Steud.) Palla ex J.Raynal		Indigenous	Sedge	x	x	x	x
<i>Scleria angusta</i> Nees ex Kunth		Indigenous	Sedge	x	x	x	x
<i>Scleria poiformis</i> Retz.		Indigenous	Sedge	x	x	x	x
<i>Searsia chirindensis</i> (Baker f.) Moffett	Red currant	Indigenous	Tree	x	x	x	x
<i>Searsia discolor</i> (E.Mey. ex Sond.) Moffett	Grassveld currant	Indigenous	Tree	x	x	x	x
<i>Searsia nebulosa</i> (Schönland) Moffett	Coastal currant	Indigenous	Climber	x	x	x	x
<i>Senecio deltoideus</i> Less	Canary creeper	Indigenous	Creeper	x	x	x	x

<i>Senecio inornatus</i> DC.	Tall marsh senecio	Indigenous	Herb	x	x	x	x
<i>Senecio macroglossus</i> DC.	Flowering Ivy	Indigenous	Herb	x	x	x	x
<i>Senecio madagascariensis</i> Poir.	Madagascar ragwort	Indigenous	Herb	x	x	x	x
<i>Senecio tamoides</i> DC.	Canary creeper	Indigenous	Herb	x	x	x	x
<i>Setaria sphacelata</i> (Schumach.) Stapf & C.E.Hubb. ex M.B.Moss	Bristle Grass	Indigenous	Grass	x	x	x	x
<i>Sida cordifolia</i> L. subsp. <i>Cordifolia</i>	Spider leg	Indigenous	Herb	x	x	x	x
<i>Sideroxylon inerme</i> L. subsp. <i>Inerme</i>	White milkwood	Protected	Tree	x	x	x	x
<i>Smilax anceps</i> Willd.	Leg-ripper	Indigenous	Creeper	x	x	x	x
<i>Solanum campylacanthum</i> Hochst. ex A.Rich. subsp. <i>panduriforme</i> (Drège ex Dunal) J.Samuels	Poison Apple	Indigenous	Herb	x	x	x	x
<i>Sporobolus fimbriatus</i> (Trin.) Nees	Fringed dropseed	Indigenous	Grass	x	x	x	x
<i>Stenochlaena tenuifolia</i> (Desv.) T.	Giant Fern	Indigenous	Fern	x	x	x	
<i>Strelitzia nicolai</i> Regel & Körn.	Wild banana	Indigenous	Tree	x	x	x	x
<i>Strelitzia reginae</i> Banks ex Aiton subsp. <i>reginae</i>	Mzimvubu craneflower	Indigenous	Tree	x	x	x	x
<i>Strychnos decussata</i> (Pappe) Gilg	Cape teak	Indigenous	Tree	x	x	x	x
<i>Strychnos madagascariensis</i> Poir.	Black monkey orange	Indigenous	Tree	x	x	x	x
<i>Strychnos spinosa</i> Lam. subsp. <i>spinosa</i>	Spiny Monkey Apple	Indigenous	Tree	x	x	x	x
<i>Syzygium cordatum</i> Hochst. ex C.Krauss subsp. <i>cordatum</i>	Umdoni	Indigenous	Tree	x	x	x	x
<i>Syzygium guineense</i> (Willd.) DC. subsp. <i>guineense</i>	Woodland waterberry	Indigenous	Tree	x	x	x	x
<i>Tagetes minuta</i> L.	Southern cone marigold	Alien	Herb	x	x	x	x
<i>Tephrosia grandiflora</i> (Aiton) Pers.	Pink Pea Bush	Indigenous	Herb	x	x	x	x
<i>Teucrium kraussii</i> Codd		Indigenous	Herb	x	x	x	x

<i>Themeda triandra</i> Forssk.	Red grass	Indigenous	Grass	x	x	x	x
<i>Trema orientalis</i> (L.) Blume	Pigeon wood	Indigenous	Tree	x	x	x	x
<i>Tricalysia capensis</i> (Meisn. ex Hochst.) Sim	Forest Jackal-coffee	Indigenous	Tree	x	x	x	x
<i>Tricalysia lanceolata</i> (Sond.) Burtt Davy	Jackalcoffee	Indigenous	Tree	x	x	x	x
<i>Trichilia dregeana</i> Sond.	Forest mahogany	Indigenous	Tree	x	x	x	x
<i>Trichilia emetica</i> subsp. <i>emetica</i>	Natal-mahogany	Indigenous	Tree	x	x	x	x
<i>Trichilia emetica</i> Vahl subsp. <i>emetica</i>	Natal mahogany	Indigenous	Tree	x	x	x	x
<i>Typha capensis</i> (Rohrb.) N.E.Br.	Bulrush	Indigenous	Sedge	x	x	x	x
<i>Urochloa panicoides</i> P.Beauv.		Indigenous	Grass	x	x	x	x
<i>Utricularia livida</i> E.Mey.	Bladderwort	Indigenous	Herb	x	x	x	x
<i>Uvaria caffra</i> E.Mey. ex Sond.		Indigenous	Creeper	x	x	x	x
<i>Verbena bonariensis</i> L.	Purpletop vervain	Alien	Herb	x	x	x	x
<i>Vigna unguiculata</i> (L.) Walp.	Cow Pea	Indigenous	Herb	x	x	x	x
<i>Wahlenbergia grandiflora</i> Brehmer.		Indigenous	Herb	x	x	x	x
<i>Xymalos monospora</i> Baill.	Lemon Wood	Indigenous	Tree	x	x	x	x
<i>Zantedeschia aethiopica</i> (L.) Spreng.	Arum Lillie	Protected	Bulb	x	x	x	x
<i>Zanthoxylum davyi</i> (I. Verd.) P.G. Waterman	Forest Knobwood	Indigenous	Tree	x	x	x	x
<i>Zehneria scabra</i> (L.f.) Sond		Indigenous	Creeper	x	x	x	x