

Appendices

Appendix 3-1. Herb species and their Non-metric Multidimensional Scaling (NMDS) scores for axis 1 to 3 and their habitat associations according to Pooley (1998). Species are listed in order of their NMDS axis 1 score.

Latin name	Axis1	Axis 2	Axis 3	Habitat
<i>Abrus precatorius</i>	-1.216	-0.480	-0.861	Open woodland
<i>Abutilon grantii</i>	-0.413	-0.298	0.231	Open sandy areas
<i>Abutilon sonneratianum</i>	0.330	-0.314	0.917	Coastal bush in light shade
<i>Acalypha villicaulis</i>	0.039	0.631	0.325	Woodland and grassland
<i>Achyranthes aspera</i>	0.526	0.154	-0.007	Widespread (some shade tolerance)
<i>Achyroopsis avicularis</i>	0.625	0.359	0.226	Forest
<i>Adenia gummifera</i>	0.452	0.035	-0.687	Forest margins
<i>Ageratum conyzoides</i>	-1.625	-0.587	-0.582	Forest
<i>Aneilema aequinoctiale</i>	0.278	0.118	0.031	Forest margins
<i>Anthericum saundersiae</i>	0.148	-0.448	-0.230	Grassland and open areas
<i>Aristida junciformis</i>	-1.241	-0.654	0.403	Grassland, forest clearings
<i>Asparagus falcatus</i>	-0.408	0.438	0.089	Forest and forest margins
<i>Asystasia gangetica</i>	0.266	0.383	-0.007	Forest edge

<i>Bidens pilosa</i>	-1.323	-0.065	-0.179	Widespread (some shade tolerance)
<i>Brachiaria chusqueoides</i>	0.199	-0.561	-0.041	Scrub, coastal bush and forest
<i>Canavalia maritima</i>	-1.693	0.514	1.126	Salt-spray zone
<i>Carpobrotus dimidiatus</i>	-1.585	-0.214	0.920	Thickets in dune vegetation
<i>Catharanthus roseus</i>	-1.072	-0.350	-0.151	Forest (climber)
<i>Centella asiatica</i>	0.127	0.355	0.183	Swampy areas
<i>Cheilanthes viridis</i>	-0.291	-0.130	-0.261	Scrub and leaf-litter of evergreen forest
<i>Chlorophytum bowkeri</i>	0.238	-0.289	0.848	Forest margins
<i>Chromolaena odorata</i>	0.391	0.339	0.395	Woodland and forest edge (non-native)
<i>Cissampelos torulosa</i>	0.558	0.514	0.232	Forest edge
<i>Cissus fragilis</i>	0.319	0.723	0.548	Forest (climber)
<i>Coccinia variifolia</i>	0.585	-0.046	-0.363	Forest (climber)
<i>Commelina benghalensis</i>	-0.228	-0.201	0.229	Disturbed areas and forest margins
<i>Commelina eckloniana</i>	-0.218	0.032	-0.217	Woodland
<i>Commelina sp.</i>	-0.612	0.802	0.081	Forest edge
<i>Conyza albida</i>	-1.445	0.328	0.264	Forest
<i>Crassula expansa</i>	-0.780	-0.951	-0.339	Shaded areas
<i>Crotalaria capensis</i>	-1.717	0.057	0.686	Coastal bush and forest margins
<i>Cuscuta campestris</i>	-0.899	2.042	-0.280	Riverine vegetation

<i>Cynanchum ellipticum</i>	-1.859	0.480	1.047	Edge of coastal scrub
<i>Cynodon dactylon</i>	0.179	-0.207	-0.029	Open areas and common in disturbed areas
<i>Cyperus albostriatus</i>	0.096	-0.381	0.407	Moist areas
<i>Cyperus macrocarpus</i>	0.551	-0.026	-0.902	Swampy grasslands
<i>Cyperus natalensis</i>	-1.009	0.061	-0.204	Grassland (sandy soils)
<i>Cyperus sphaerospermus</i>	-1.779	0.469	0.980	Swampy areas
<i>Cyphostemma hypoleucum</i>	0.473	0.134	0.785	Wooded slopes (climber)
<i>Dactyloctenium australe</i>	0.087	-0.571	-0.319	Grassland and bushveld
<i>Dactyloctenium geminatum</i>	0.323	-0.401	-0.124	Coastal bush near sea
<i>Desmodium incanum</i>	-1.662	0.466	0.192	Open woodland
<i>Digitaria diversinervis</i>	-0.212	0.054	-0.030	Forest margins
<i>Digitaria natalensis</i>	-1.047	2.171	-0.241	Dune forest
<i>Dioscorea quartiniana</i>	-1.602	-0.034	0.280	Forest, thickets and woodland (climber)
<i>Dioscorea retusa</i>	0.772	0.993	0.764	Woodland and forest (Climber)
<i>Dioscorea sylvatica</i>	-0.041	0.056	-0.914	Forest edge
<i>Drimiopsis maculata</i>	0.601	0.754	0.085	Forest margins
<i>Eragrostis ciliaris</i>	-0.014	-0.688	0.324	Woodland

<i>Eriosema psoraleoides</i>	-0.708	1.698	-0.171	Sandy coastal areas (open)
<i>Flagellaria guineensis</i>	-1.222	-0.554	-1.371	Open areas (wide tolerance)
<i>Gymnosporia arenicola</i>	-0.985	-0.788	0.304	Grassland
<i>Helichrysum decorum</i>	-1.316	-0.664	0.118	Forest edge
<i>Helichrysum kraussii</i>	-1.360	-0.458	-0.135	Dune slacks
<i>Hibiscus surattensis</i>	-0.414	0.214	0.589	Disturbed areas
<i>Imperata cylindrica</i>	-0.058	0.656	0.128	Open sandy areas
<i>Indigofera trita</i>	-0.418	-0.743	-0.165	Forest edge
<i>Ipomoea ficifolia</i>	-1.483	0.043	-0.518	Riverine forest and grasslands
<i>Juncus kraussii</i>	-0.350	-0.492	0.287	Grassland and forest
<i>Krauseola mosambicina</i>	-0.889	1.724	-0.114	Open scrub on coastal dunes
<i>Kyllinga alba</i>	0.440	-0.099	0.429	Sand dunes, open areas
<i>Lagenaria sphaerica</i>	-0.799	1.450	0.003	Forest and woodland (climber)
<i>Lantana camara</i>	0.562	0.189	0.361	Grassland and open woodland
<i>Laportea peduncularis</i>	-0.348	0.213	1.133	Coastal forest
<i>Melinis repens</i>	-0.277	-0.176	0.211	Open woodland and coastal forest

<i>Microsorium scolopendrium</i>	-1.086	1.643	-0.232	Forest and woodland (fern)
<i>Neonotonia wightii</i>	0.631	1.064	-0.530	Forest (vine)
<i>Oldenlandia affinis</i>	-0.913	-0.152	-0.609	Woodland , grassland, and scrub
<i>Oxalis corniculata</i>	-0.164	-0.040	-1.559	grasslands and disturbed areas
<i>Panicum laticomum</i>	-0.160	0.078	-0.060	Woodland (shaded)
<i>Panicum maximum</i>	-0.279	1.280	-0.116	Open woodland and bushveld
<i>Passiflora subpeltata</i>	-0.758	0.237	-0.764	Forest and woodland (non-native)
<i>Phyllanthus parvulus</i>	0.548	0.736	0.146	Forest
<i>Priva meyeri</i>	-1.750	1.965	0.267	Woodland and forest margin
<i>Pupalia lappacea</i>	-0.120	1.110	0.090	Widespread (some shade tolerance)
<i>Pyrenacantha scandens</i>	0.471	0.076	0.063	Forest (Liana)
<i>Rhynchosia caribaea</i>	-0.511	-0.250	-0.033	Forest margins
<i>Richardia brasiliensis</i>	-0.035	0.132	0.388	Disturbed areas
<i>Rivina humulis</i>	-0.253	-0.163	-0.495	Forest (non-native)
<i>Sansevieria hyacinthoides</i>	0.464	0.202	-0.277	Woodland
<i>Sarcostemma viminalis</i>	0.344	-0.406	0.595	Savanna
<i>Scadoxus puniceus</i>	0.292	0.126	-0.375	Subtropical thicket

<i>Secamone filiformis</i>	0.366	-0.249	-0.695	Shaded riverine and swampy areas
<i>Senecio conrathii</i>	0.497	0.070	-0.432	Grassland
<i>Senecio deltoideus</i>	0.306	0.105	-0.297	Open woodland and bushveld
<i>Senecio helminthioides</i>	0.301	0.157	0.153	Forest (climber)
<i>Senecio quinquelobus</i>	-1.067	-0.474	0.006	Forest margins
<i>Senecio tamoides</i>	0.469	0.373	0.413	Evergreen forest margins (climber)
<i>Sida cordifolia</i>	0.545	0.390	-0.603	Grassland
<i>Smilax anceps</i>	-1.146	1.432	-0.031	Secondary forest
<i>Solanum macrocarpon</i>	0.693	0.826	0.970	Grassland and woodland
<i>Solanum rigescens</i>	0.574	0.262	0.413	Littoral zone
<i>Sporobolus africanus</i>	-1.494	0.863	-0.026	Sandy coastal areas (open)
<i>Stenotaphrum secundatum</i>	0.597	0.228	0.728	Swampy areas, close to seashore
<i>Tinospora caffra</i>	0.726	1.044	0.912	Forest and woodland
<i>Tragia glabrata</i>	0.660	0.547	0.434	Grassland
<i>Triumfetta rhomboidea</i>	-1.073	0.760	-0.192	Disturbed areas
<i>Vernonia angulifolia</i>	-0.177	0.239	1.943	Dune and coastal forest margins
<i>Vernonia aurantiaca</i>	0.134	0.276	-0.426	Woodland and riverine vegetation

<i>Wahlenbergia undulata</i>	-0.339	0.741	1.243	Wasteland, disturbed area
<i>Zehneria parvifolia</i>	-1.155	0.725	0.423	Woodland and forest (Climber)

Appendix 3-2. Bird species, their Non-metric Multidimensional Scaling (NMDS) scores for axis 1 to 3 and their habitat associations according to Gibbon (2006).

Species	Latin name	Axis 1	Axis 2	Axis 3	Habitat
African Pipit	<i>Anthus cinnamomeus</i>	1.888	-0.750	-1.092	Grassland
Ashy Flycatcher	<i>Muscicapa caerulescens</i>	-0.284	-0.192	0.231	Edge of evergreen forest
Black-backed Puffback	<i>Dryoscopus cubla</i>	-0.369	-0.048	0.240	Canopy of woodland and forest
Black-bellied Starling	<i>Lamprotornis corruscus</i>	-0.924	-0.407	0.696	Canopy of evergreen forest
Brown-hooded Kingfisher	<i>Halcyon albiventris</i>	-0.530	-0.760	-0.020	Woodland and savanna
Cape White-eye	<i>Zosterops virens</i>	-0.296	-0.069	0.270	Forest and woodland
Collared Sunbird	<i>Hedydipna collaris</i>	-0.342	-0.040	-0.361	Coastal bush
Common Waxbill	<i>Estrilda astrild</i>	2.040	-0.076	-0.707	Grassland
Dark-backed Weaver	<i>Ploceus bicolor</i>	-0.545	-0.187	0.170	Middle and upper strata of evergreen forest
Dark-capped Bulbul	<i>Pycnonotus tricolor</i>	0.362	-0.230	0.411	Woodland and forest edge
Eastern Nicator	<i>Nicator gularis</i>	-0.108	-0.246	-0.625	Forest and thickets
Eastern Olive Sunbird	<i>Cyanomitra olivacea</i>	-0.377	-0.400	0.180	Evergreen forest
Fork-tailed Drongo	<i>Dicrurus adsimilis</i>	-0.140	-0.260	0.560	Woodland and savanna



Green-backed Camaroptera	<i>Camaroptera brachyura</i>	-0.181	0.352	0.054	Forest edges
Grey Sunbird	<i>Cyanomitra veroxii</i>	-0.416	0.730	0.259	Coastal bush and forest
Hadeda Ibis	<i>Bostrychia hagedash</i>	0.391	-0.135	-0.861	Grasslands, savanna, bush, and forest edge
Livingstone's Turaco	<i>Tauraco livingstonii</i>	-0.051	1.094	-1.459	Evergreen forest
Long-billed Crombec	<i>Sylvietta rufescens</i>	0.232	-0.298	-0.314	Woodland and savanna
Rattling Cisticola	<i>Cisticola chinianus</i>	1.354	0.301	0.025	Acacia savanna and open woodland
Red-capped Robin- Chat	<i>Cossypha natalensis</i>	-0.304	-0.294	-0.474	Evergreen forest and thickets
Rudd's Apalis	<i>Apalis ruddi</i>	-0.066	0.618	-0.499	Coastal bush and woodland
Sombre Greenbul	<i>Andropadus importunus</i>	0.061	0.181	-0.754	Forest, coastal bush and thickets
Southern Boubou	<i>Laniarius ferrugineus</i>	-0.080	-0.467	-0.600	Thicket
Square-tailed Drongo	<i>Dicrurus ludwigii</i>	-0.351	-0.548	0.289	Middle strata of evergreen forest
Tambourine Dove	<i>Turtur tympanistria</i>	-0.341	-0.511	-0.300	Evergreen forest
Tawny-flanked Prinia	<i>Prinia subflava</i>	0.807	-0.010	-0.293	Grassland and savanna
Terrestrial Brownbul	<i>Phyllastrephus terrestris</i>	-0.217	-0.860	-0.274	Evergreen forest

Thick-billed Weaver	<i>Amblyospiza albifrons</i>	1.365	-0.356	0.395	Reed-beds (breeding) and forest (non-breeding)
Weavers ¹	<i>Ploceus species</i>	1.340	-0.233	1.311	Acacia savanna and open woodland
White-browed Scrub-Robin	<i>Cercotrichas leucophrys</i>	0.238	0.391	-0.400	Woodland and thickets
White-eared Barbet	<i>Stactolaema leucotis</i>	-0.179	-0.817	0.472	Evergreen Forest
Willow Warbler	<i>Phylloscopus trochilus</i>	0.290	0.431	0.070	Woodland and forest edge
Yellow-bellied Greenbul	<i>Chlorocichla falviventris</i>	-0.352	-0.101	-0.044	Coastal bush
Yellow-breasted Apalis	<i>Apalis flavida</i>	-0.219	0.341	0.145	Mixed woodland or bush
Yellow-fronted Canary	<i>Serinus mozambicus</i>	1.690	-0.023	-0.117	Bush and woodland
Yellow-rumped Tinkerbird	<i>Pogoniulus bilineatus</i>	-0.354	-0.321	0.182	Coastal forest
Zitting Cisticola	<i>Cisticola juncidis</i>	1.638	-0.289	0.293	Grassland

¹Yellow weavers (*Ploceus subaureus*) and Lesser masked weavers (*P. intermedius*) were treated as a morphospecies because females are difficult to distinguish in the field (Kritzinger and van Aarde (1998).

Appendix 3-3. Tree species, their Non-metric Multidimensional Scaling (NMDS) scores for axis 1 to 3 and their habitat associations according to Coates-Palgrave (2003).

Species	Latin name	Axis 1	Axis 2	Axis 3	Habitat
Sweet-thorn Acacia	<i>Acacia karroo</i>	-0.719	0.081	0.039	Dune forest (pioneer)
Scented-pod Acacia	<i>Acacia kraussiana</i>	-0.341	-0.833	0.312	Scrub and forest
Dune false current	<i>Allophylus natalensis</i>	0.410	-0.374	-0.029	Coastal dune forest and bush
Tassleberry	<i>Antidesma venosum</i>	0.095	0.399	0.583	Forest margins and woodland
White Pear	<i>Apodytes dimidiata</i>	0.222	0.162	0.493	Forest and forest margins
Coast silver Oak	<i>Brachylaena discolor</i>	-0.005	0.546	-0.037	Coastal dunes and bush
Blue sweet-berry	<i>Bridelia cathartica</i>	-0.093	-0.009	0.571	Forest margins, open woodland and riverine forest
Common turkeyberry	<i>Canthium inerme</i>	0.377	0.295	-0.026	Forest, forest margin, bushveld and dune forest
Natal Plum or Large num-num	<i>Carissa macrocarpa</i>	1.176	0.458	-0.248	Coastal forest margin
Emetic nut	<i>Catunaregam spinosa</i>	-0.367	-0.624	0.761	Bushveld, forest margin and dune forest
White Stinkwood	<i>Celtis africana</i>	0.002	-0.655	-0.016	Forest (widespread - pioneer)
Inkberry	<i>Cestrum laevigatum</i>	-0.087	-0.306	-0.004	Forest margins (non-native)
Giant Pock Ironwood	<i>Chaetacme aristata</i>	-0.079	-1.426	-0.327	Coastal forest and scrub
Horsewood	<i>Clausena anisata</i>	0.542	-0.466	-0.287	Bushveld thicket and forest margins
Tinderwood	<i>Clerodendrum glabrum</i>	-0.303	-0.357	-0.382	Widespread in coastal dunes, forest margins, bushveld, thicket and riverine forest

Dune Soapberry	<i>Deinbollia oblongifolia</i>	-0.224	-0.567	0.407	Forest, scrub, bushveld and dune bush
Natal Apricot	<i>Dovyalis longispina</i>	1.034	-0.899	0.082	Forest and bushveld
Large-leaved dragon tree	<i>Dracaena alectrifolia</i>	0.137	-0.239	0.193	Coastal dune forest and shaded ravines
Dune myrtle	<i>Eugenia capensis</i>	0.683	0.219	0.572	Seaward side of coastal dunes
Veld fig	<i>Ficus burtt-davyi</i>	1.331	-0.529	0.558	Bushveld and open woodland
Climbing Raisin bush	<i>Grewia caffra</i>	0.954	0.298	0.726	Bushveld, woodland, riverine forest and forest margin (can be a climber)
Cross-berry	<i>Grewia occidentalis</i>	-0.064	-0.449	0.174	Forest, forest margins, bushveld and thicket
White forest spike-thorn	<i>Gymnosporia nemorosa</i>	0.665	-0.053	-0.429	Forest, forest margins, bushveld and coastal dunes
Rhino-coffee	<i>Kraussia floribunda</i>	0.895	0.307	-0.380	Forest margins, riverine vegetation, and swamp forest
Koko tree	<i>Maytenus undata</i>	1.272	0.016	-0.396	Forest, forest margins a in bushveld along watercourses
Coastal red milk-plum	<i>Mimusops caffra</i>	0.434	0.409	0.165	Coastal dune forest
Poison olive	<i>Peddiea africana</i>	0.920	0.484	0.381	Forest and forest margins
Senegal date-palm	<i>Phoenix reclinata</i>	0.983	0.147	0.188	Open-forest and savanna (palm)
Guava	<i>Psidium guajava</i>	-1.364	0.191	-0.887	Forest (in natural range), grasslands, disturbed areas (Non-native)
Bird berry	<i>Psychotria capensis</i>	0.868	0.104	0.662	Forest and forest margins
Quar	<i>Psydrax obovata</i>	-0.040	0.236	-0.006	Forest and forest margins
Natal rhus	<i>Rhus natalensis</i>	0.807	0.297	-0.162	Coastal scrub and dune forest
Dune current	<i>Rhus nebulosa</i>	0.234	0.420	-0.236	Dune scrub and forest margins
Cat-thorn	<i>Scutia myrtina</i>	0.191	-0.048	0.504	Coastal forest, scrub forest and forest margins (climber)
White milkwood	<i>Sideroxylon inerme</i>	0.732	-0.425	-0.495	Coastal forest, woodland and scrub



Strelitzia or Crane flower	<i>Strelitzia nicolai</i>	0.648	0.099	0.526	Coastal dunes (Palm)
Zulu Cherry-orange	<i>Teclea gerrardii</i>	0.074	-0.505	0.144	Coastal dune bush, forest, and riverine forest
Pigeon wood	<i>Trema orientalis</i>	-0.823	-0.099	-0.291	Forest-edge (pioneer tree)
Jackal-coffee	<i>Tricalysia lanceolata</i>	0.686	0.565	-0.670	Coastal areas, riverine vegetation and open woodland
Coast-coffee	<i>Tricalysia sonderiana</i>	0.310	0.000	0.815	Forest, dune forest, and bushveld
Natal mahogany	<i>Trichilia emetica</i>	0.801	0.141	-0.429	Coastal areas, riverine vegetation and open woodland (widespread)
White Ironwood	<i>Vepris lanceolata</i>	0.329	-0.008	-0.404	Forest, riverine bush and scrub (widespread)
Small Knobwood	<i>Zanthoxylum capense</i>	0.223	-0.401	-0.561	Dry scrub bushveld and forest margins
Buffalo Thorn	<i>Ziziphus mucronata</i>	-0.718	-0.703	-0.148	Bushveld and forest

Appendix 3-4. Millipede species and their Non-metric Multidimensional Scaling (NMDS) scores for axis 1 to 3. There are no independent sources of information on their habitat associations.

Species	Axis 1	Axis 2	Axis 3
<i>Centrobolus fulgidus</i>	-0.54125	-0.12669	-0.06438
<i>Centrobolus richardii</i>	0.030092	0.256443	-0.35567
<i>Centrobolus rugulosus</i>	-0.33464	-1.28212	-0.01779
<i>Doratogonus</i> sp.*	0.74758	0.179887	-0.16997
<i>Gnomeskelus tuberosus</i>	0.093001	-0.51086	0.138415
<i>Juliaformia</i> sp.*	0.989596	-0.56878	-0.08981
<i>Orthroporoides pyrocephalus</i>	1.553339	0.90054	0.411473
<i>Orthroporoides</i> sp.*	0.506975	-1.29529	-0.69268
<i>Sphaerotherium giganteum</i>	0.344149	-0.67968	0.777536
<i>Sphaerotherium punctulatum</i>	1.149382	-0.66832	0.281929
<i>Sphaerotherium rotundatum</i>	0.677715	-1.4181	0.917772
<i>Sphaerotherium</i> sp.*	-1.46338	-1.03666	1.41567
<i>Sphaerotherium</i> sp.B*	0.578288	0.927759	-1.14289
<i>Sphaerotherium</i> sp.C*	0.585378	-0.70302	0.726205
<i>Sphaerotherium</i> sp.D*	1.215584	0.711891	-1.50355
<i>Spinotarsus anguiliferous</i>	-0.05474	0.523816	0.475629
<i>Spirostreptidae</i> sp.1*	1.069355	0.184503	-0.15242
<i>Spirostreptidae</i> sp.2*	1.177639	0.328197	0.159555

* Some species are yet to be officially identified past the genus level

Appendix 4-1. The year of establishment and mean elevation (meters above sea level) for each rehabilitating coastal dune forest site.

Site name	Year of establishment	Elevation (meters above sea level; mean \pm standard deviation)
Site 1	1977	50.67 \pm 5.06
Site 2	1980	56.86 \pm 5.72
Site 3	1984	51.42 \pm 8.56
Site 4	1988	49.32 \pm 21.03
Site 5	1992	56.82 \pm 18.72
Site 6	1996	51.98 \pm 21.60

Appendix 4-2. The 15 non-native species recorded in the rehabilitating coastal dune forests. All species listed in the Conservation of Agricultural Resources Act (1983) are in category 1; species that are prohibited weeds in need of control in all situations. Species authorities are sourced from the International Plant Names Index (<http://www.ipni.org/index.html>).

Latin Name	Common Name(s)
<i>Achyranthes aspera</i> (L.)	Burweed ¹
<i>Ageratum conyzoides</i> (L.)	Invading ageratum ^{1,2}
<i>Bidens bipinnata</i> (L.)	Spanish Blackjack ²
<i>Bidens pilosa</i> (L.)	Blackjack ²
<i>Catharanthus roseus</i> (G. Don)	Madagascar periwinkle ²
<i>Chromolaena odorata</i> (L.), R.M.King & H.Rob.	Trifid weed ^{1,2}
<i>Commelina benghalensis</i> (L.)	Benghal wondering Jew ²
<i>Lantana camara</i> (L.)	Lantana, Tickberry, Cherrypie ^{1,2}
<i>Oxalis corniculata</i> (L.)	Creeping oxalis ²
<i>Passiflora subpeltata</i> (Ortega)	Passion fruit ²
<i>Rivina humilis</i> (L.)	Bloodberry ^{1,2}



Sonchus oleraceus (L.)

Sowthistle²

Tagetes minuta (L.)

Khaki-weed, Mexican marigold²

Cuscuta campestris (Yunk.)

Common dodder¹

Richardia brasiliensis (Gomez)

Tropical Mexican clover, White-eye²

¹ Conservation of Agricultural Resources Act (1983)

² Henderson (2007)

Summary

Coastal dune forest is an eco-region within a biodiversity hotspot as it falls within the southern-most part of the Maputaland Centre of Endemism. Mining is the largest threat to coastal dune forest conservation. However, for the last 34 years the mining company Richards Bay Minerals has been engaged in a rehabilitation programme that aims to facilitate the recovery of coastal dune forest through ecological succession. Through this thesis, I aimed to evaluate the ecological consequences of this programme for the conservation of these coastal dune forests.

To begin with, I evaluated if succession is a suitable conceptual basis for the restoration of coastal dune forest. Patterns of community characteristics observed in rehabilitating coastal dune forest sites fitted with those predicted by theory. I then assessed three factors that could potentially compromise the efficacy of succession-based restoration management. The first of these was the establishment of non-native species. Non-native plants did not contribute the most to dissimilarity between rehabilitating and reference sites and deviation of the regeneration trajectory was due to higher abundances of a native species. The second factor was disturbance in the form of canopy-gap formation. Rehabilitation of coastal dune forest is reliant on the pioneer species, *Acacia karroo* and in other studies self-replacement by this species has been hypothesized to be responsible for the stagnation of succession. The most abundant gap-takers were secondary forest species suggesting that succession had not stagnated. The final factor was the role that the surrounding landscape played in community assembly. I correlated the probability of patch occupancy with patch age, area, isolation and edge. Patch age only explained the occupancy of six of 21 birds and eleven of 25 trees.

Finally, I provide a synthesis of my findings and an evaluation of the rehabilitation of coastal dune forest in terms of the ecological consequences and threats that stem from the

rehabilitation efforts of the last 33 years. This final evaluation includes discussion on the measurement of restoration success and assesses the progress of the coastal dune forests of KwaZulu-Natal toward successful rehabilitation.