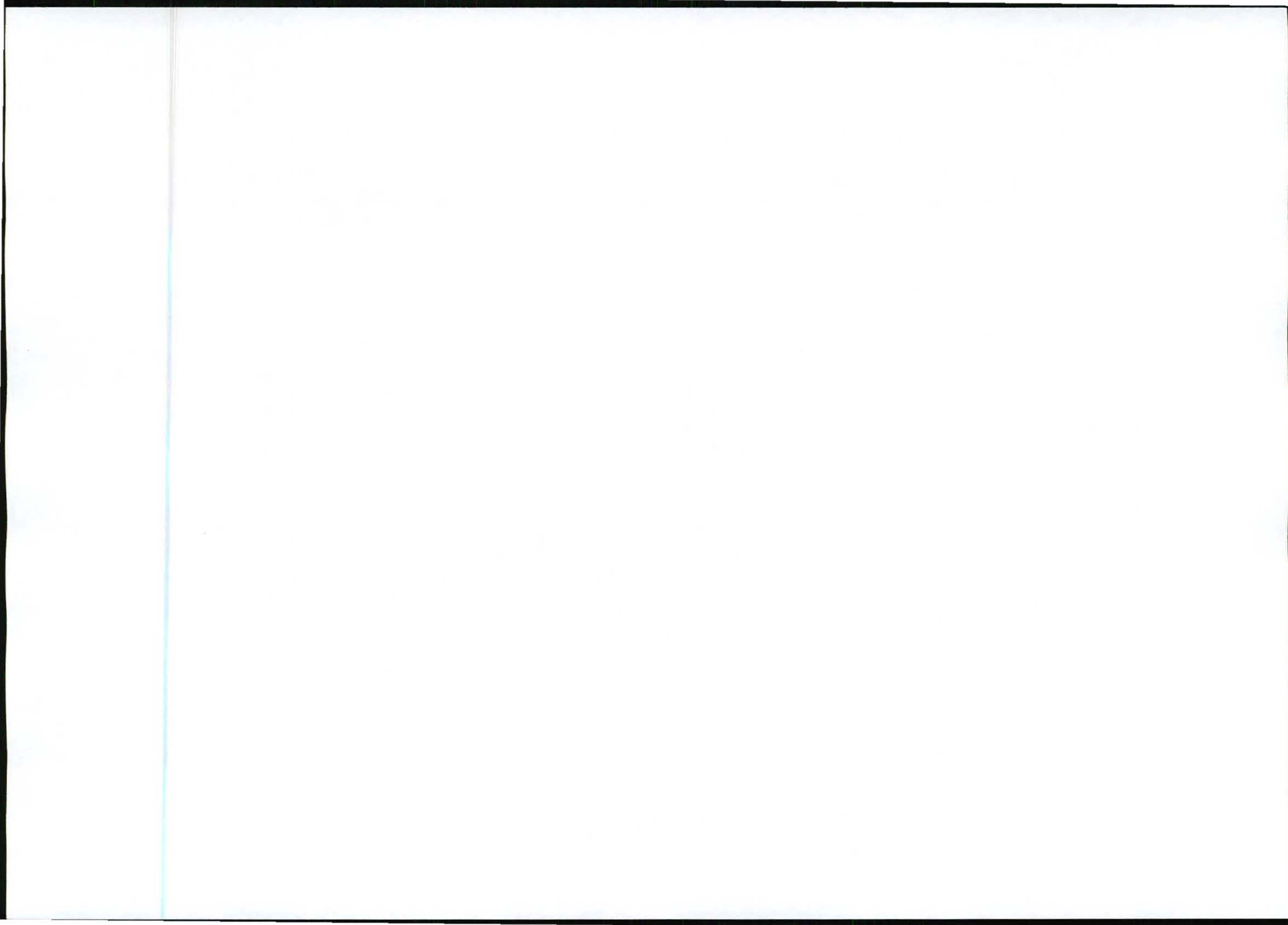
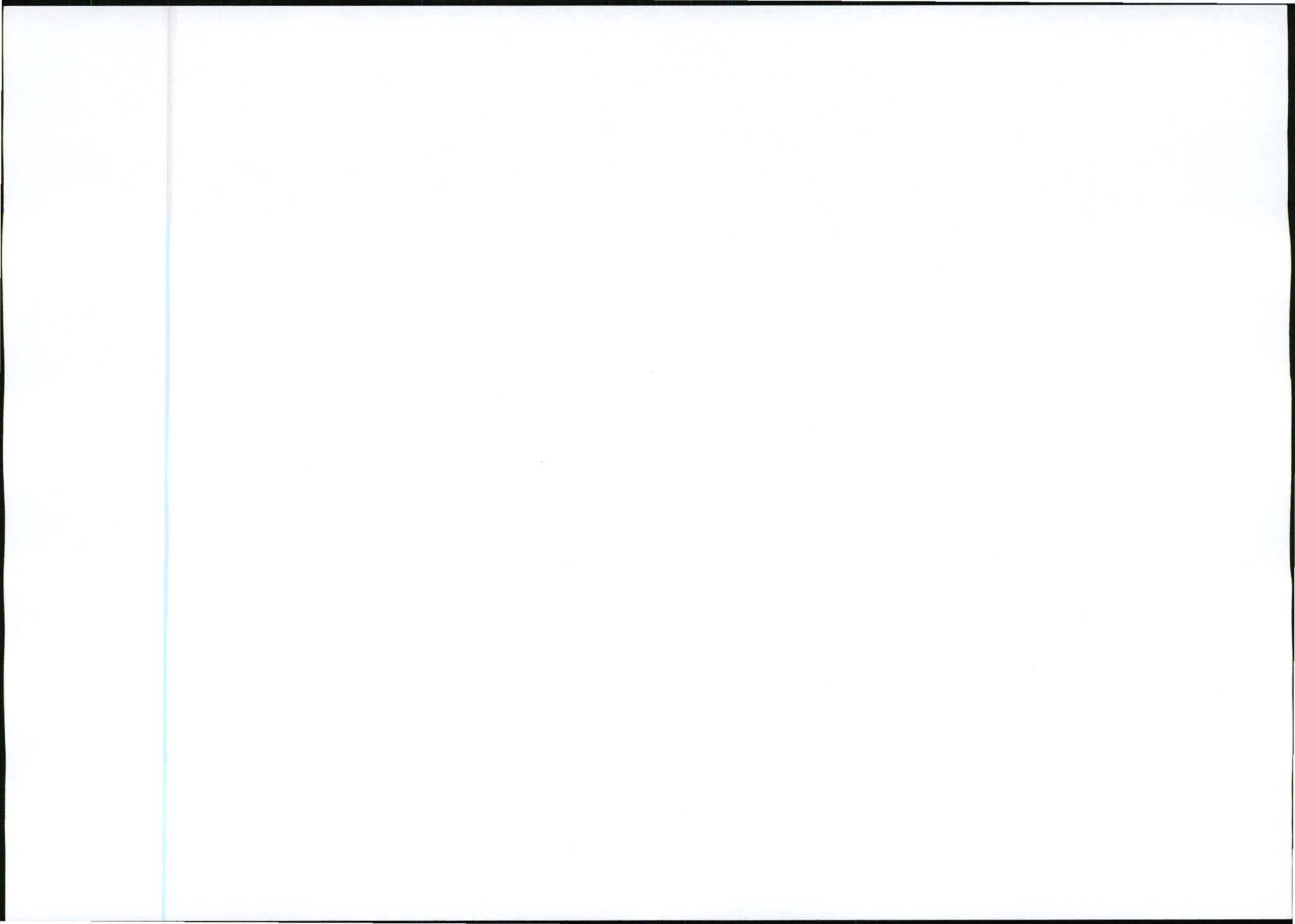


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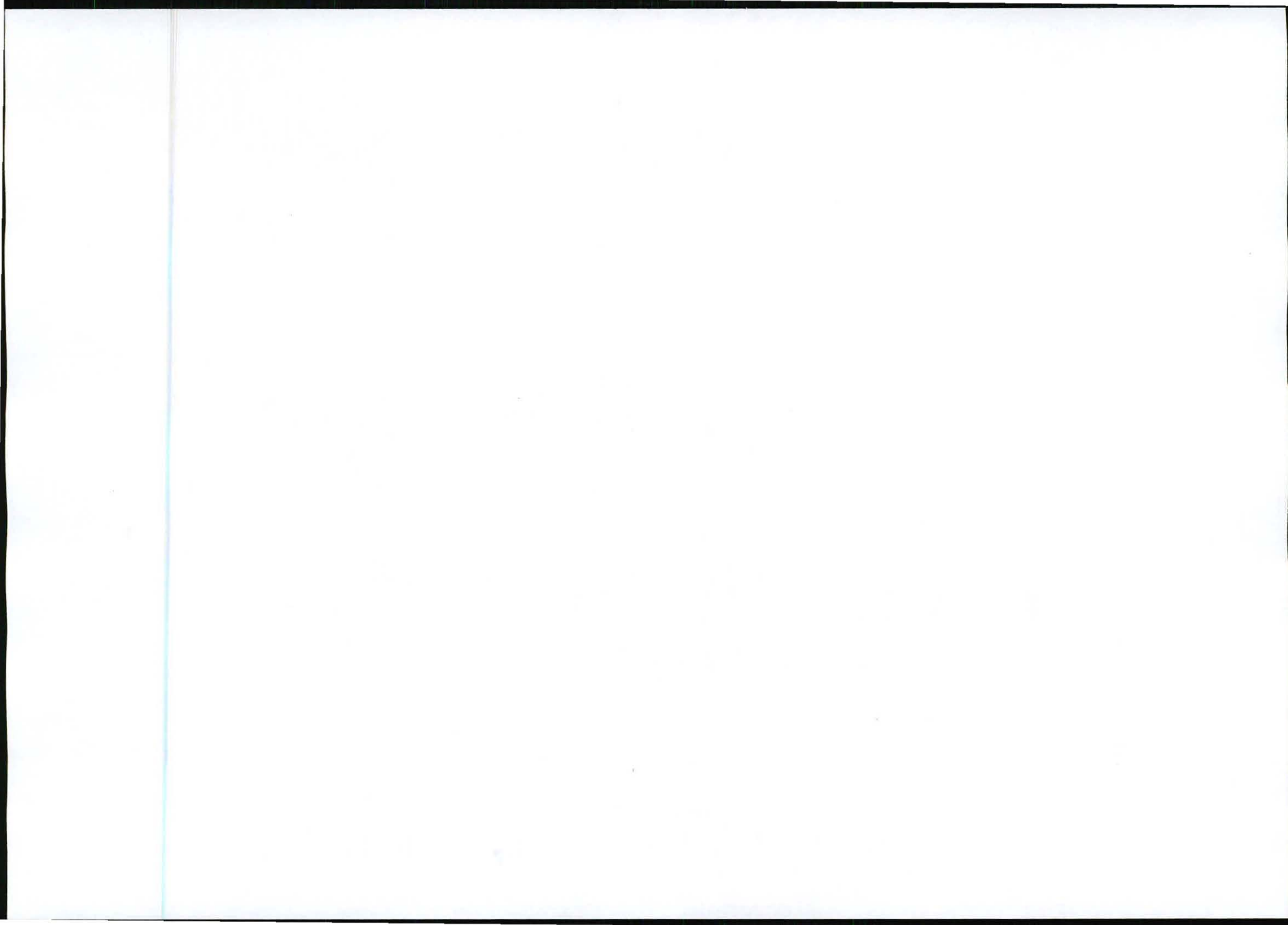
## Appendices

### *Appendix 1. Waypoints for sample plots in TP-37*

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Plot id	S (DD)	E (DD)	Altitude		Date and time
			m asl	Farm name	
100	-32.03892	25.38190	883	Denmark	15-SEP-09 8:01:23AM
101	-32.03748	25.38203	880	Denmark	15-SEP-09 8:43:27AM
102	-32.03748	25.38033	885	Denmark	15-SEP-09 9:16:36AM
103	-32.03797	25.37893	884	Denmark	15-SEP-09 9:40:36AM
104	-32.03813	25.37818	888	Denmark	15-SEP-09 9:56:44AM
105	-32.03898	25.37973	893	Denmark	15-SEP-09 10:21:09AM
106	-32.08128	25.30180	1024	Groene vallei	15-SEP-09 12:12:12PM
107	-32.08175	25.30193	1031	Groene vallei	15-SEP-09 12:30:18PM
108	-32.08223	25.30182	1036	Groene vallei	15-SEP-09 12:49:30PM
109	-32.07830	25.30890	1088	Groene vallei	15-SEP-09 1:40:49PM
110	-32.07772	25.30975	1086	Groene vallei	15-SEP-09 2:03:55PM
111	-32.07850	25.31297	1084	Groene vallei	15-SEP-09 2:29:44PM
112	-32.07905	25.31182	1103	Groene vallei	15-SEP-09 2:48:17PM
113	-32.07865	25.30970	1104	Groene vallei	15-SEP-09 3:09:19PM

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## **Appendix 2. Protected and conservation status of plant species recorded in 3225AB & BB**

Plant species are arranged by family, in alphabetical order. This list was compiled from the following data bases (1) data collected from 14 sample plots on 15 September 2009, and the *PRECIS specimen database* for 3225AB downloaded from POSA (<http://posa.sanbi.org>) on September 24th, 2009. *Freesia andersoniae* was identified by specialist John Manning (SANBI).

Protected status of plants Nationally was obtained from DEAT 2007. Provincial protection status is from Schedule 3 of Western Cape Nature Conservation Laws Amendment Act, No. 3 of 2000.

Information on the conservation status of the plant species was obtained from the *PRECIS* database and from the *National Red list of South African Plants* (Feb 2009) available as a download from <http://www.sanbi.org/biodiversity/reddata.htm> The status given to taxa in this Red List applies only to the section of the global population occurring within South Africa in the case of taxa that are not endemic to South Africa. The Red List is placed on the website with the intention to allow free and easy access to conservation officials and EIA consultants.

### **DEFINITIONS OF THE CATEGORIES**

**CR PE (Critically Endangered, Possibly Extinct)** Critically Endangered (possibly extinct) taxa are those that are, on the balance of evidence, likely to be extinct, but for which there is a small chance that they may be extant. Hence they should not be listed as Extinct until adequate surveys have failed to record the species.

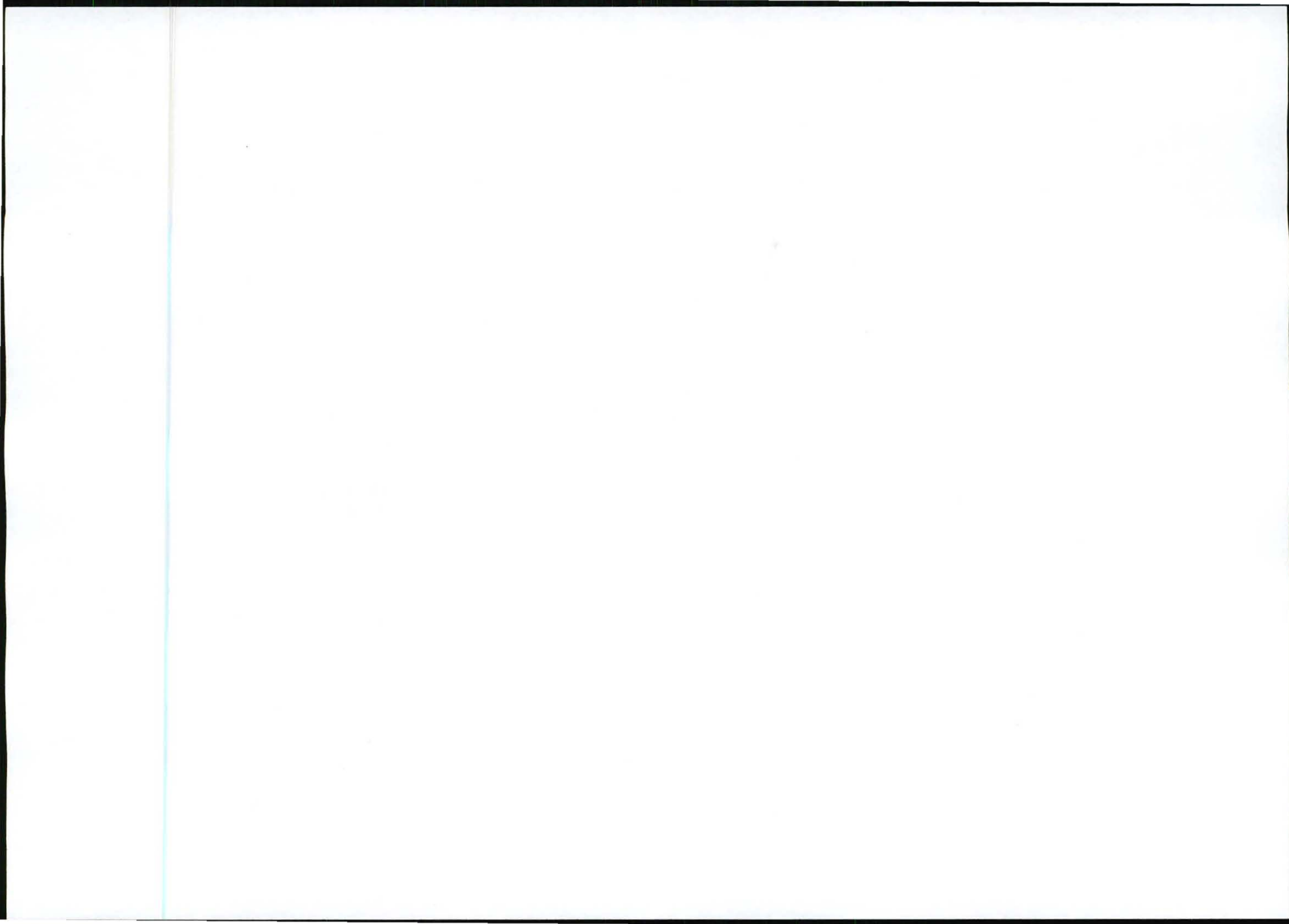
**CR (Critically Endangered)** A taxon is Critically Endangered when the best available evidence indicates that it meets any of the five IUCN criteria for Critically Endangered, and is therefore facing an extremely high risk of extinction in the wild.

**EN (Endangered)** A taxon is Endangered when the best available evidence indicates that it meets any of the five IUCN criteria for Endangered, and is therefore facing a very high risk of extinction in the wild.

**VU (Vulnerable)** A taxon is Vulnerable when the best available evidence indicates that it meets any of the five IUCN criteria for Vulnerable, and is therefore facing a high risk of extinction in the wild.

**NT (Near Threatened)** A taxon is Near Threatened when available evidence indicates that it nearly meets any of the five IUCN criteria for Vulnerable, and is therefore likely to qualify for a threatened category in the near future.

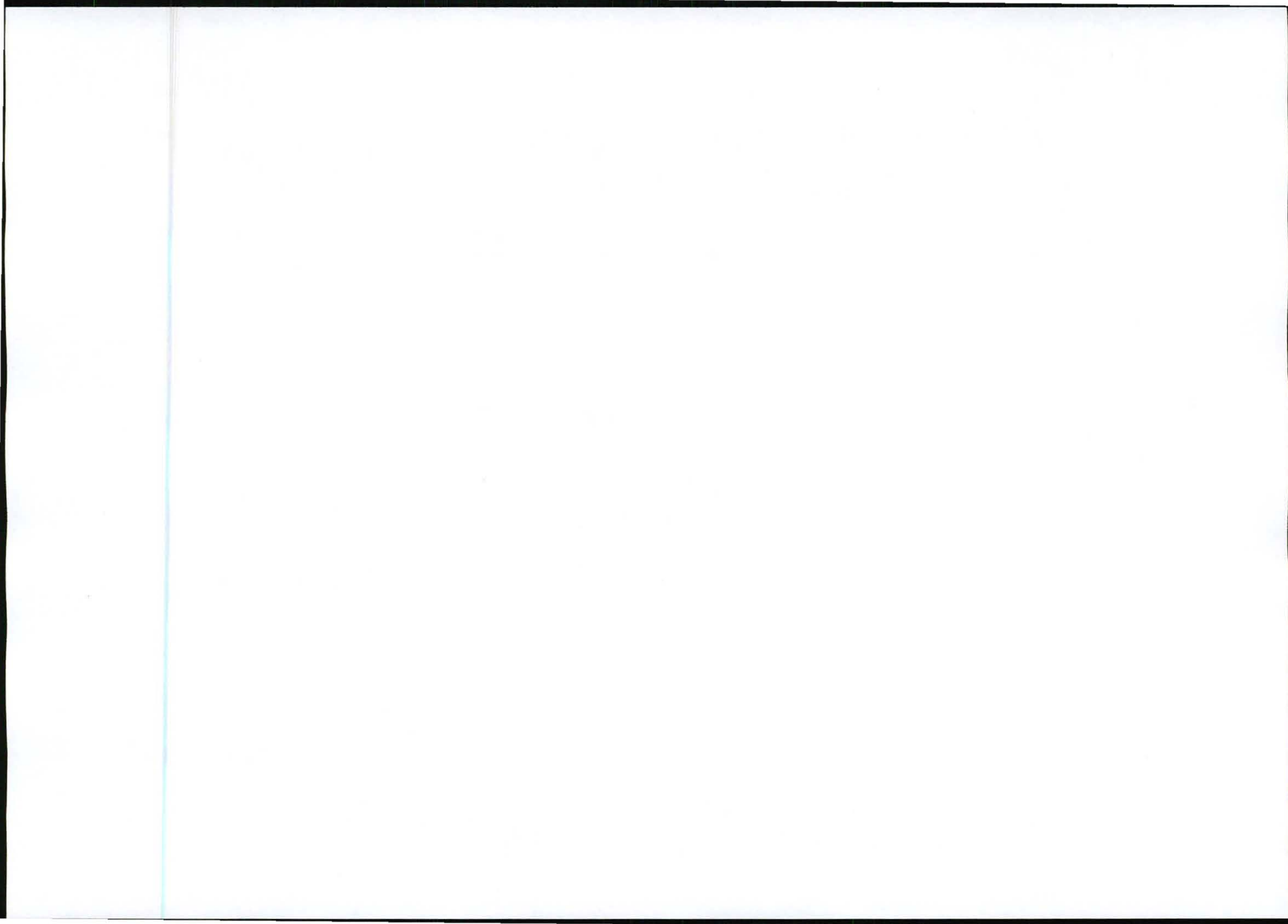
**Critically Rare** A taxon is Critically Rare when it is known to only occur at a single site, but is not exposed to any direct or plausible potential threat and do not qualify for a category of threat according to the five IUCN criteria.



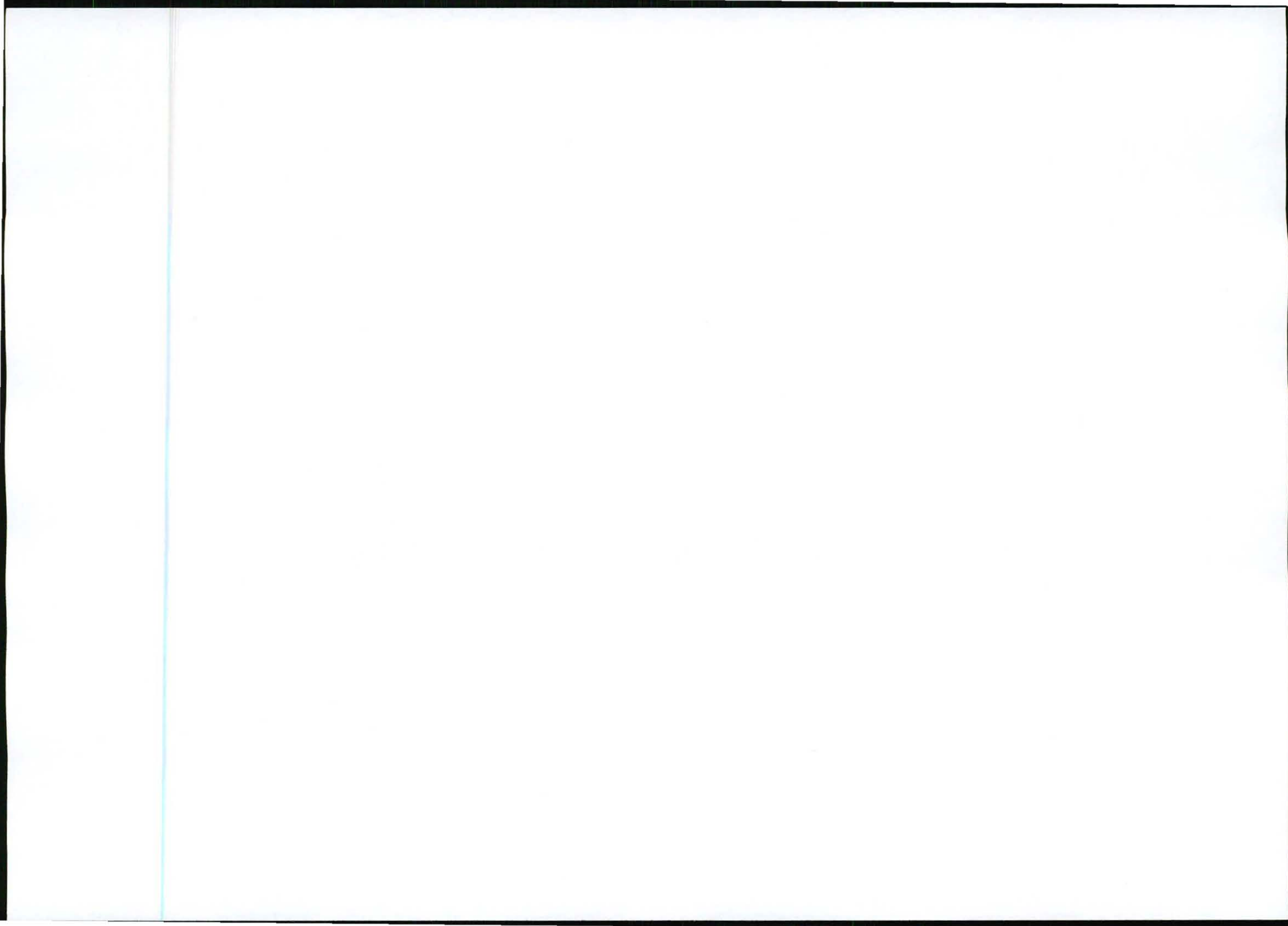


- Rare** A taxon is Rare when it meets any of the four South African criteria for rarity, but is not exposed to any direct or plausible potential threat and do not qualify for a category of threat according to the five IUCN criteria.
- Declining** A taxon is Declining when it does not meet any of the five IUCN criteria and does not qualify for the categories Critically Endangered, Endangered, Vulnerable or Near Threatened, but there are threatening processes causing a continuing decline in the population.
- LC (Least Concern)** A taxon is Least Concern when it has been evaluated against the five IUCN criteria and does not qualify for the categories Critically Endangered, Endangered, Vulnerable and Near Threatened, or the South African categories Critically Rare, Rare or Declining. Widespread and abundant taxa are typically listed in this category.
- DDD (Data Deficient - Insufficient Information)** A taxon is DDD when there is inadequate information to make an assessment of its risk of extinction. Data Deficient is not a category of threat, however, listing of taxa in this category indicates that more information is required and that future research could show that a threatened classification is appropriate
- DDT (Data Deficient - Taxonomically Problematic)** A taxon is DDT when taxonomical problems hinder its distribution range and habitat from being well defined, so that an assessment of risk of extinction is not possible.
- Thr\*** Taxa that have been identified as likely to be threatened during the final stages of the compilation of this Red List. Their status has however not yet been finalized.
- NE** Not evaluated i.e. not yet assessed against the criteria.

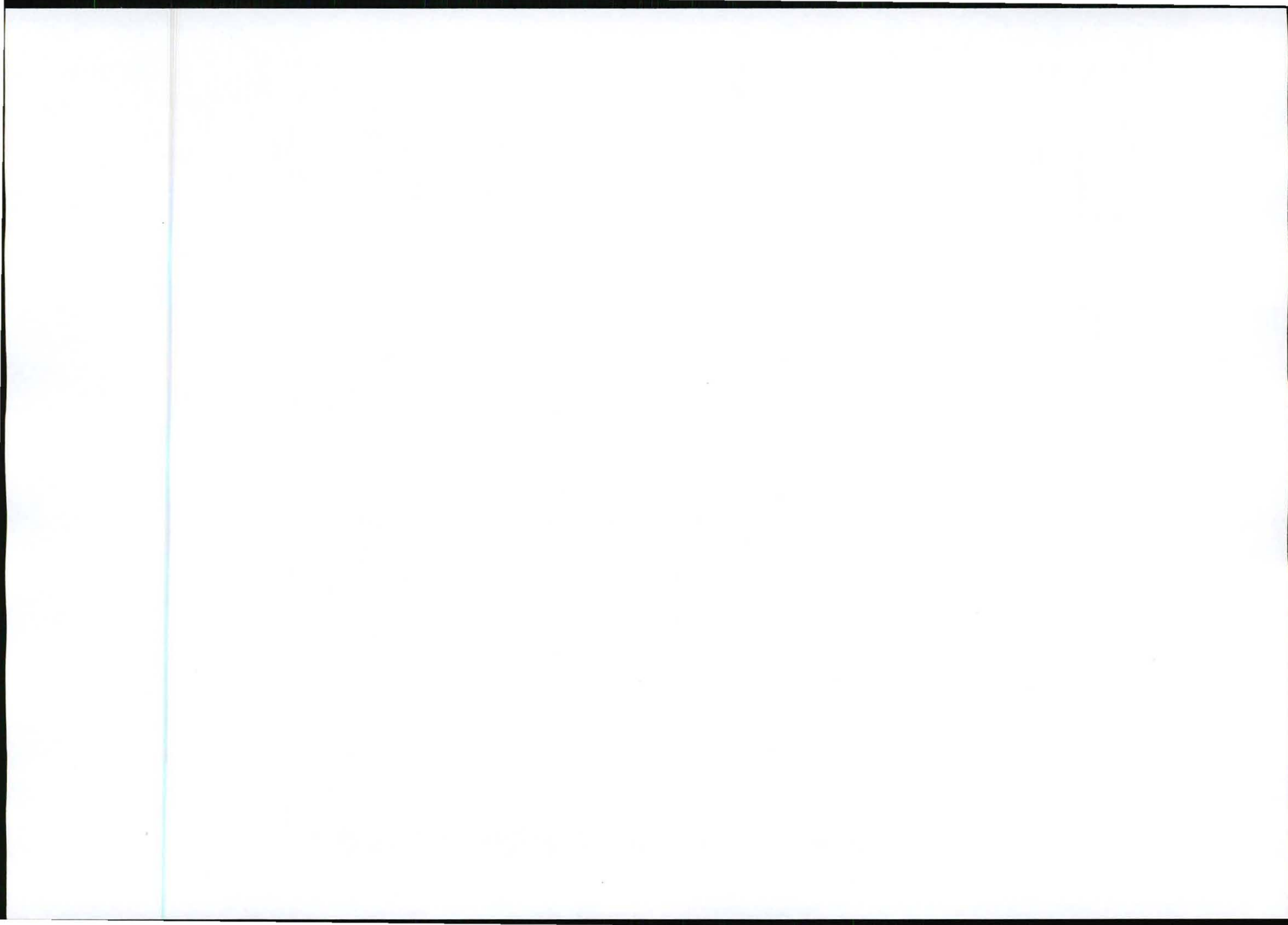
Family	Species	Alien status	Conservation status	Protection status	PRECIS		
					3225AB & BB	Groene Vallei	Denmark
ACANTHACEAE	Blepharis capensis (L.f.) Pers.		LC		x		
ACANTHACEAE	Blepharis mitrata C.B.Clarke					x	x
ACANTHACEAE	Monechma incanum (Nees) C.B.Clarke					x	
AIZOACEAE	Aizoon glinoides L.f.		LC		x		
AIZOACEAE	Galenia pubescens (Eckl. & Zeyh.) Druce		NE		x		
AMARYLLIDACEAE	Ammocharis coranica (Ker Gawl.) Herb.		LC	W & E Cape	x		
AMARYLLIDACEAE	Boophone disticha (L.f.) Herb.		Declining	W & E Cape	x	x	
AMARYLLIDACEAE	Gethyllis transkarooica						
AMARYLLIDACEAE	D.Müll.-Doblies		LC	W & E Cape	x		
AMARYLLIDACEAE	Haemanthus albiflos Jacq.		LC	W & E Cape	x		
AMARYLLIDACEAE	Nerine huttoniae Schönland		VU	W & E Cape	x		
AMARYLLIDACEAE	Strumaria gemmata Ker Gawl.		LC	W & E Cape	x		
ANACARDIACEAE	Searsia dregeana (Sond.) Moffett		LC		x		



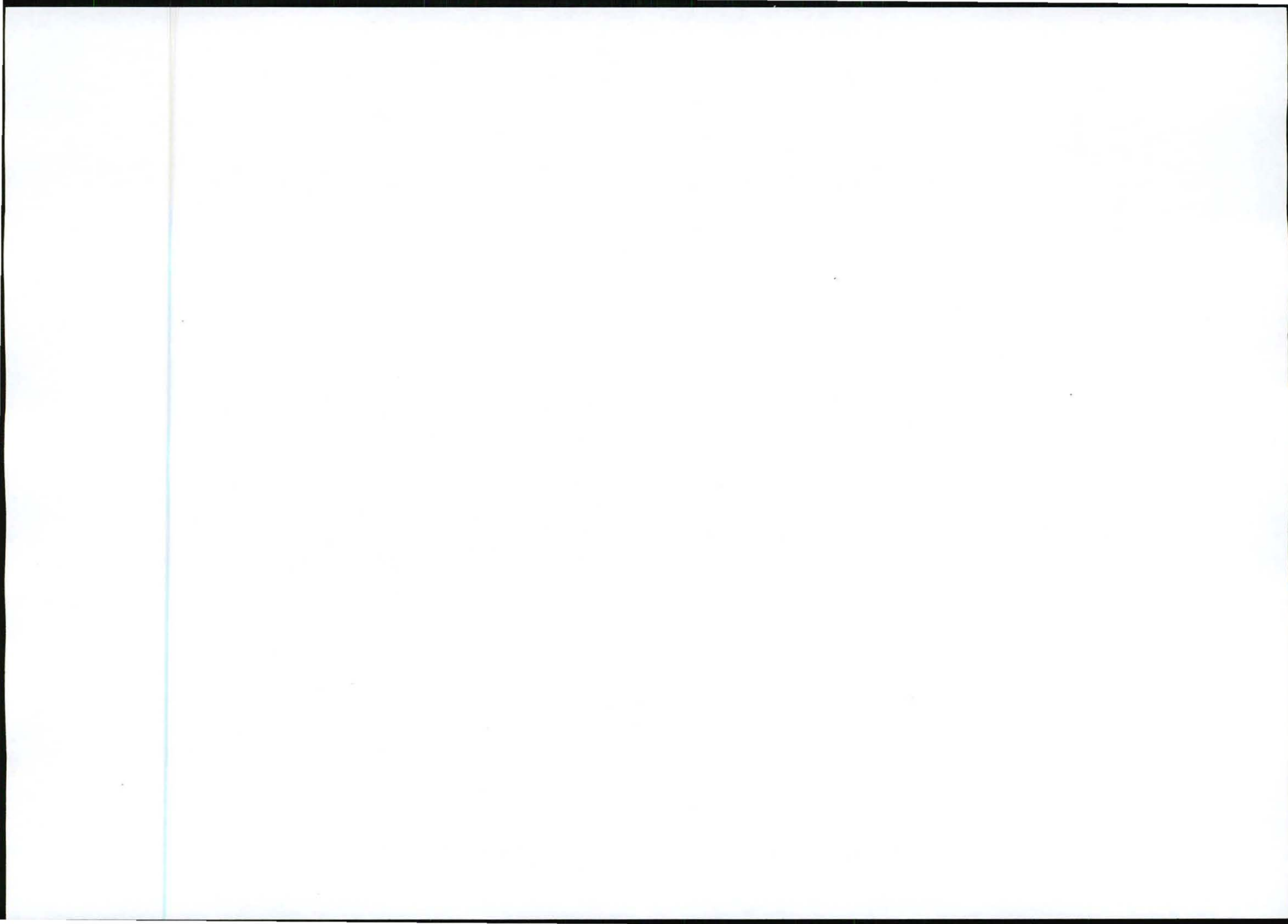
Family	Species	Alien	Conservation status	Protection status	PRECIS		
					3225AB & BB	Groene Vallei	Denmark
ANACARDIACEAE	<i>Searsia erosa</i> (Thunb.) Moffett		LC		x		
ANACARDIACEAE	<i>Searsia gracillima</i> (Engl.) Moffett var. <i>gracillima</i>		NT		x		
ANACARDIACEAE	<i>Searsia longispina</i> Eckl. & Zeyh					x	
ANACARDIACEAE	<i>Searsia pyroides</i> (Burch.) Moffett var. <i>pyroides</i>		LC		x		
ANACARDIACEAE	<i>Searsia undulata</i> (Jacq.) T.S.Yi, A.J.Mill. & J.Wen		LC		x	x	x
ANEMIACEAE	<i>Mohria caffrorum</i> (L.) Desv.		LC		x		
APIACEAE	<i>Berula erecta</i> (Huds.) Coville		LC		x		
APIACEAE	<i>Deverra burchellii</i> (DC.) Eckl. & Zeyh.		LC		x		
APIACEAE	<i>Heteromorpha arborescens</i> (Spreng.) Cham. & Schtdl. var. <i>arborescens</i>		LC		x		
APOCYNACEAE	<i>Carissa haematocarpa</i> (Eckl.) A.DC.						x
APOCYNACEAE	<i>Gomphocarpus tomentosus</i> Burch.		LC	W & E Cape	x		
APOCYNACEAE	<i>Huernia brevirostris</i> N.E.Br.		NE	W & E Cape	x		
APOCYNACEAE	<i>Huernia kennedyana</i> Lavranos		Rare	W & E Cape	x		
APOCYNACEAE	<i>Microlooma armatum</i> (Thunb.) Schltr. var. <i>armatum</i>			W & E Cape		x	
APOCYNACEAE	<i>Orbea miscella</i> (N.E.Br.) Meve		LC	W & E Cape	x		
APOCYNACEAE	<i>Pachypodium succulentum</i> (Jacq.) Sweet		LC	W & E Cape	x		
APOCYNACEAE	<i>Stapelia grandiflora</i> Masson var. <i>grandiflora</i>		LC	W & E Cape	x		
ASPARAGACEAE	<i>Asparagus acocksii</i> Jessop		LC		x		
ASPARAGACEAE	<i>Asparagus aethiopicus</i> L.					x	
ASPARAGACEAE	<i>Asparagus capensis</i> L. var. <i>capensis</i>		LC		x		
ASPARAGACEAE	<i>Asparagus densiflorus</i> (Kunth) Jessop		LC		x		
ASPARAGACEAE	<i>Asparagus denudatus</i> (Kunth) Baker		LC		x		
ASPARAGACEAE	<i>Asparagus mucronatus</i> Jessop		LC		x		
ASPARAGACEAE	<i>Asparagus retrofractus</i> L.				x		x
ASPARAGACEAE	<i>Asparagus striatus</i> (L.f.) Thunb.		LC		x	x	
ASPARAGACEAE	<i>Asparagus suaveolens</i> Burch.		LC		x	x	x
ASPHODELACEAE	<i>Aloe broomii</i> Schönland			W & E Cape			x
ASPHODELACEAE	<i>Aloe striata</i> Haw.		LC	W & E Cape	x		
ASPHODELACEAE	<i>Bulbine abyssinica</i> A.Rich.		LC		x		
ASPHODELACEAE	<i>Bulbine frutescens</i> (L.) Willd.		LC		x		
ASPHODELACEAE	<i>Bulbine narcissifolia</i> Salm- Dyck		LC		x		



Family	Species	Alien status	Conservation status	Protection status	PRECIS		
					3225AB & BB	Groene Vallei	Denmark
ASPHODELACEAE	Kniphofia acraea Codd		Rare	W & E Cape	x		
	Asplenium cordatum (Thunb.) Sw.		LC		x		
ASPLENIACEAE	Asplenium trichomanes L.		LC		x		
	Arctotheca calendula (L.) Levyns		LC		x		
ASTERACEAE	Berkheya decurrens (Thunb.) Willd.		LC		x		
ASTERACEAE	Berkheya heterophylla (Thunb.) O.Hoffm.				x		x
ASTERACEAE	Chrysocoma ciliata L.		LC		x	x	x
ASTERACEAE	Cineraria aspera Thunb.		LC		x		
ASTERACEAE	Cineraria geraniifolia DC.		LC		x		
ASTERACEAE	Cineraria lobata L'Hér.		LC		x		
ASTERACEAE	Cirsium vulgare (Savi) Ten. *		NE		x		
ASTERACEAE	Conyza podocephala DC.		LC		x		
ASTERACEAE	Conyza scabrida DC.		LC		x		
ASTERACEAE	Cotula zeyheri Fenzl		LC		x		
	Dimorphotheca cuneata (Thunb.) Less.		LC		x		x
ASTERACEAE	Dimorphotheca zeyheri Sond.		LC		x		
	Eriocephalus ericoides (L.f.) Druce		LC		x	x	x
ASTERACEAE	Eriocephalus eximius DC.		LC		x		
ASTERACEAE	Euryops annae E.Phillips		LC		x		
	Euryops anthemoides B.Nord. subsp. anthemoides		LC		x		
	Euryops oligoglossus DC. subsp. oligoglossus		LC		x		
ASTERACEAE	Euryops spathaceus DC.		LC		x		
ASTERACEAE	Felicia fascicularis DC.		LC		x		
	Felicia filifolia (Vent.) Burtt Davy		LC		x	x	
ASTERACEAE	Felicia muricata (Thunb.) Nees		LC		x	x	x
	Felicia ovata (Thunb.) Compton		LC		x	x	
ASTERACEAE	Felicia zeyheri (Less.) Nees		LC		x		
	Garuleum pinnatifidum (Thunb.) DC.		LC		x		
ASTERACEAE	Gazania krebsiana Less.		LC		x		x
ASTERACEAE	Helichrysum cerastioides DC. var. cerastioides		LC		x		
	Helichrysum dregeanum Sond. & Harv.					x	x
ASTERACEAE	Helichrysum hamulosum E.Mey. ex DC.		LC		x		
ASTERACEAE	Helichrysum odoratissimum (L.) Sweet var. odoratissimum		NE		x		
ASTERACEAE	Helichrysum rosum (P.J.Bergius)		LC		x	x	

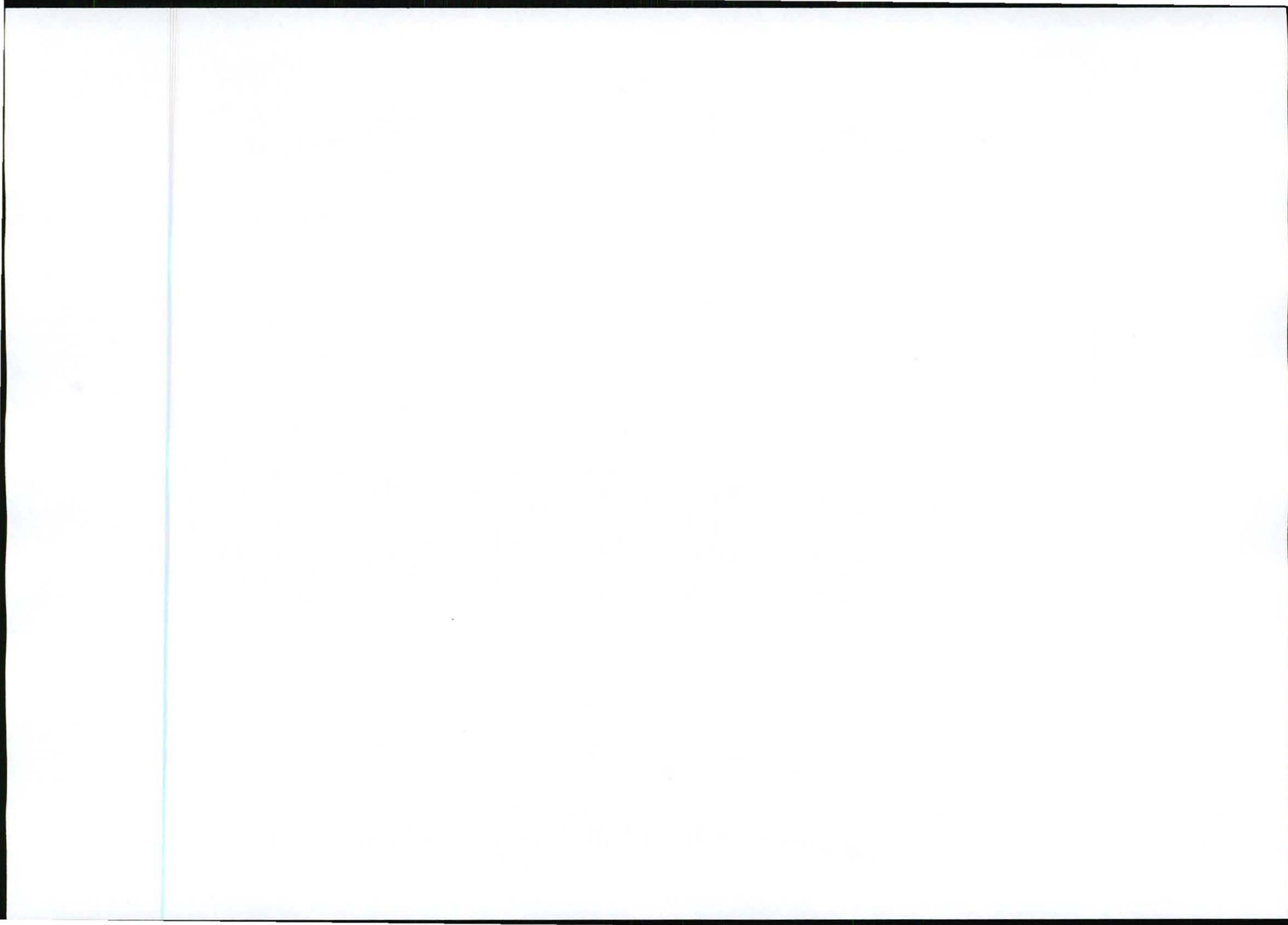


Family	Species	Alien	Conservation status	Protection status	PRECIS		
					3225AB & BB	Groene Vallei	Denmark
ASTERACEAE	<i>Helichrysum rutilans</i> (L.) D.Don		LC		x		
ASTERACEAE	<i>Helichrysum trilineatum</i> DC.		LC		x	x	x
ASTERACEAE	<i>Helichrysum zeyheri</i> Less.		LC		x	x	
ASTERACEAE	<i>Hertia pallens</i> (DC.) Kuntze		LC		x		
ASTERACEAE	<i>Lactuca inermis</i> Forssk.		LC		x		
ASTERACEAE	<i>Lasiopogon muscoides</i> (Desf.) DC.		LC		x		
ASTERACEAE	<i>Lasiospermum pedunculare</i> Lag.		LC		x		
ASTERACEAE	<i>Marasmodes polycephala</i> DC.		LC		x		
ASTERACEAE	<i>Oligocarpus calendulaceus</i> (L.f.) Less.		LC		x		
ASTERACEAE	<i>Oncosiphon piluliferum</i> (L.f.) Källersjö		LC		x		
ASTERACEAE	<i>Osteospermum leptolobum</i> (Harv.) Norl.		LC		x		x
ASTERACEAE	<i>Othonna auriculifolia</i> Licht. ex Less.		LC		x		
ASTERACEAE	<i>Othonna pavonia</i> E.Mey.		LC		x		
ASTERACEAE	<i>Pegolettia retrofracta</i> (Thunb.) Kies		LC		x	x	x
ASTERACEAE	<i>Pentzia cooperi</i> Harv.		LC		x		
ASTERACEAE	<i>Pentzia globosa</i> Less.		LC		x		
ASTERACEAE	<i>Pentzia incana</i> (Thunb.) Kuntze					x	x
ASTERACEAE	<i>Pentzia punctata</i> Harv.		LC		x		
ASTERACEAE	<i>Pentzia sphaerocephala</i> DC.		LC		x	x	x
ASTERACEAE	<i>Phymaspermum aciculare</i> (E.Mey. ex Harv.) Benth. & Hook. ex B.D.Jacks		LC		x	x	x
ASTERACEAE	<i>Pteronia glauca</i> Thunb.					x	
ASTERACEAE	<i>Senecio achilleifolius</i> DC.		LC		x		
ASTERACEAE	<i>Senecio asperulus</i> DC.		LC		x		
ASTERACEAE	<i>Senecio incomptus</i> DC.		LC		x		
ASTERACEAE	<i>Senecio linifolius</i> L.		LC		x		
ASTERACEAE	<i>Senecio radicans</i> (L.f.) Sch.Bip.					x	
ASTERACEAE	<i>Senecio ruwenzoriensis</i> S.Moore		LC		x		
ASTERACEAE	<i>Senecio striatifolius</i> DC.		LC		x		
ASTERACEAE	<i>Tarchonanthus minor</i> Less.		LC		x		
ASTERACEAE	<i>Tripteris aghillana</i> DC. var. aghillana		LC		x		
ASTERACEAE	<i>Troglophyton capillaceum</i> (Thunb.) Hilliard & B.L.Burt		LC		x		
ASTERACEAE	<i>Ursinia montana</i> DC.		LC		x		
ASTERACEAE	<i>Ursinia nana</i> DC.		LC		x		
AYTONIACEAE	<i>Mannia capensis</i> (Steph.) S.W.Arnell				x		

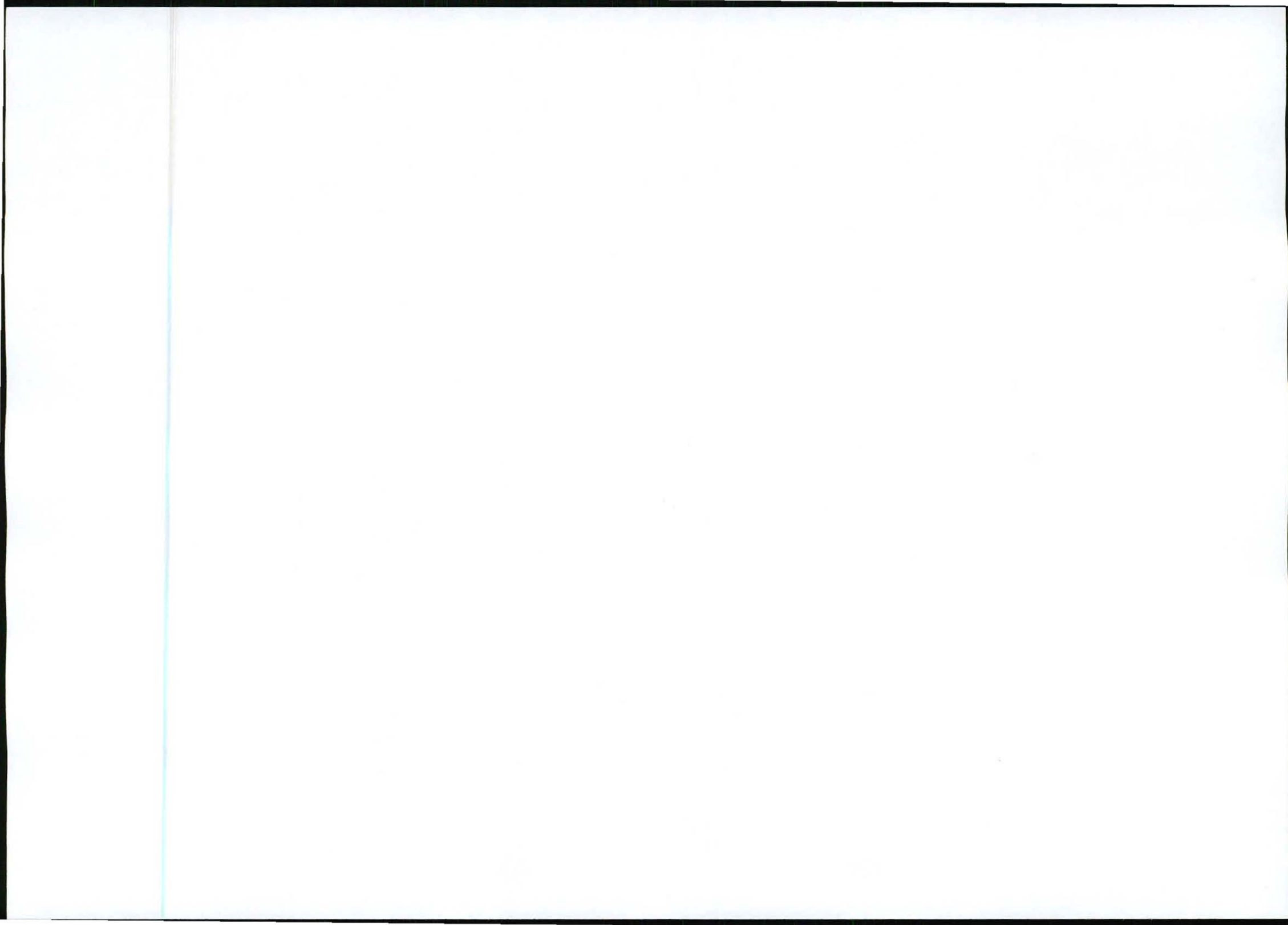




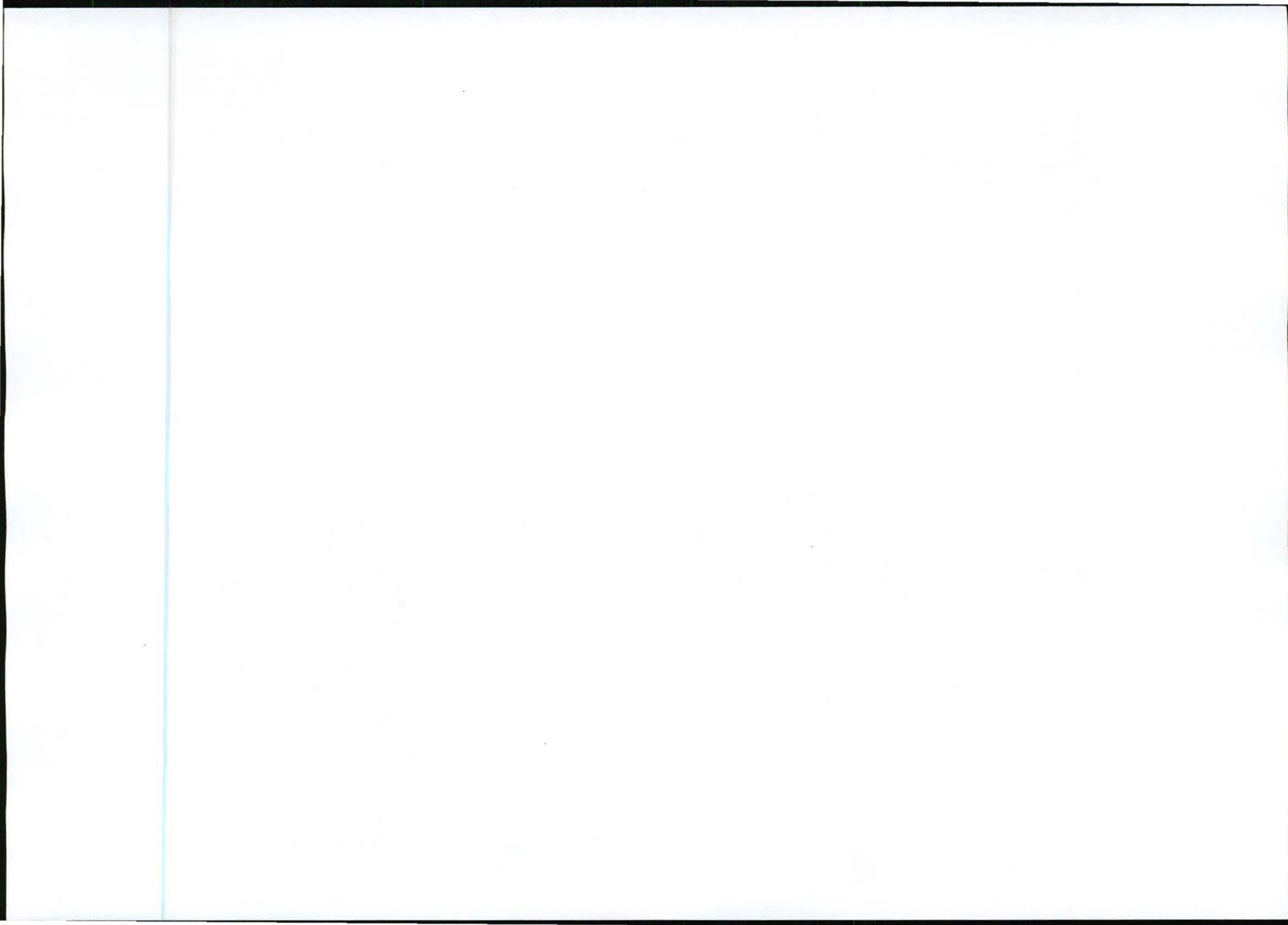
Family	Species	Alien status	Conservation status	Protection status	PRECIS		
					3225AB & BB	Groene Vallei	Denmark
AYTONIACEAE	Plagiochasma rupestre (J.R.& G.Forst.) Steph. var. rupestre				x		
BIGNONIACEAE	Rhigozum obovatum Burch.					x	
BORAGINACEAE	Anchusa capensis Thunb.	LC			x		
BORAGINACEAE	Lithospermum cinereum A.DC.		LC		x		
BORAGINACEAE	Erucastrum strigosum (Thunb.) O.E.Schulz		LC		x		
BRASSICACEAE	Heliophila cornuta Sond. var. squamata (Schltr.) Marais		LC		x		
BRASSICACEAE	Heliophila species					x	x
BRASSICACEAE	Heliophila suavissima Burch. ex DC.		LC		x		
BRASSICACEAE	Lepidium africanum (Burm.f.) DC.		LC		x		
BRASSICACEAE	Sisymbrium burchellii DC. var. burchellii		LC		x		
BRASSICACEAE	Sisymbrium capense Thunb.		LC		x		
BRASSICACEAE	Sisymbrium orientale L. *		NE		x		
BRYACEAE	Bryum argenteum Hedw.				x		
BRYACEAE	Bryum pycnophyllum (Dixon) Mohamed				x		
BUDDLEJACEAE	Buddleja salviifolia (L.) Lam.		LC		x		
BUDDLEJACEAE	Gomphostigma virgatum (L.f.) Baill.		LC		x		
CACTACEAE	Echinopsis spachiana (Lem.) Friedrich & G.D.Rowley *					x	
CACTACEAE	Opuntia ficus-indica (L.) Mill. *					x	
CAMPANULACEAE	Lightfootia species						x
CAMPANULACEAE	Wahlenbergia albens (Spreng. ex A.DC.) Lammers		LC		x		
CAMPANULACEAE	Wahlenbergia androsacea A.DC.		LC		x		
CAMPANULACEAE	Wahlenbergia galpiniae Schltr.		LC		x		
CAPPARACEAE	Boscia oleoides (Burch. ex DC.) Toelken		LC		x		
CAPPARACEAE	Cadaba aphylla (Thunb.) Wild		LC		x		
CARYOPHYLLACEAE	Dianthus micropetalus Ser.		LC		x		x
CARYOPHYLLACEAE	Silene undulata Aiton		LC		x		
CARYOPHYLLACEAE	Stellaria pallida (Dumort.) Piré		NE		x		
CELASTRACEAE	Gymnosporia buxifolia (L.) Szyszyl.		LC		x		
CHENOPODIACEAE	Atriplex semibaccata R.Br. var. appendiculata Aellen		LC		x		
CHENOPODIACEAE	Atriplex suberecta I.Verd.		LC		x		
CHENOPODIACEAE	Chenopodium mucronatum Thunb.		LC		x		
CHENOPODIACEAE	Chenopodium murale L. var. murale *		NE		x		
COMMELINACEAE	Commelina africana L. var.		LC		x		



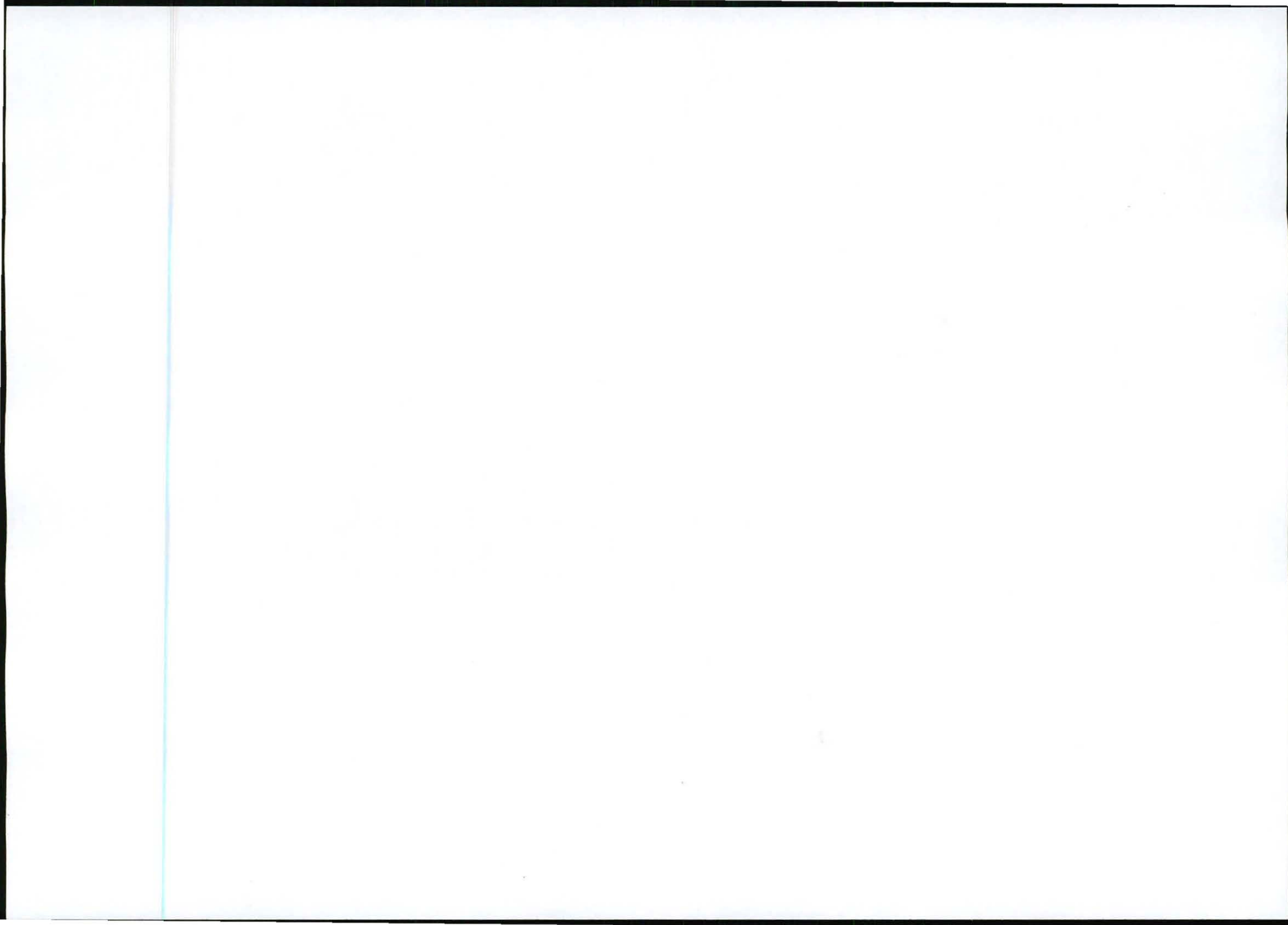
Family	Species	Conservation Alien status	Protection status	PRECIS		
				3225AB & BB	Groene Vallei	Denmark
	<i>africana</i>					
COMMELINACEAE	<i>Commelina africana</i> L. var. <i>lancispatha</i> C.B.Clarke	LC		x		
COMMELINACEAE	<i>Cyanotis speciosa</i> (L.f.) Hassk.	LC		x		
CONVOLVULACEAE	<i>Ipomoea oenotheroides</i> (L.f.) Raf. ex Hallier f.	LC		x		
CRASSULACEAE	<i>Cotyledon campanulata</i> Marloth	LC		x		
CRASSULACEAE	<i>Crassula capitella</i> Thunb. subsp. <i>thyrsoflora</i> (Thunb.) Toelken	LC		x	x	
CRASSULACEAE	<i>Crassula lanuginosa</i> Harv. var. <i>pachystemon</i> (Schönland & Baker f.) Toelken	LC		x		
CRASSULACEAE	<i>Crassula muscosa</i> L. var. <i>muscosa</i>	LC		x	x	
CRASSULACEAE	<i>Crassula pubescens</i> Thunb.	LC		x		
CRASSULACEAE	<i>Crassula species</i>					x
CRASSULACEAE	<i>Crassula tetragona</i> L. <i>Crassula vaillantii</i> (Willd.) Roth *	LC	NE	x		
CRASSULACEAE	<i>Kalanchoe rotundifolia</i> (Haw.) Haw.	LC		x		
CUCURBITACEAE	<i>Kedrostis africana</i> (L.) Cogn. <i>Bulbostylis humilis</i> (Kunth)	LC		x		
CYPERACEAE	<i>Cyperus congestus</i> Vahl	LC		x		
CYPERACEAE	<i>Cyperus rupestris</i> Kunth var. <i>rupestris</i>	LC		x		
CYPERACEAE	<i>Cyperus usitatus</i> Burch.	LC		x		
CYPERACEAE	<i>Isolepis costata</i> Hochst. ex A.Rich.	LC		x		
CYPERACEAE	<i>Isolepis karroica</i> (C.B.Clarke) J.Raynal	LC		x		
CYPERACEAE	<i>Isolepis setacea</i> (L.) R.Br.	LC		x		
CYPERACEAE	<i>Kyllinga alata</i> Nees	LC		x		
CYPERACEAE	<i>Kyllinga alba</i> Nees				x	
CYPERACEAE	<i>Mariscus uitenhagensis</i> Steud.	LC		x		
CYPERACEAE	<i>Pseudoschoenus inanis</i> (Thunb.) Oteng-Yeb.	LC		x		
DRACAENACEAE	<i>Sansevieria aethiopica</i> Thunb.	LC		x		
EBENACEAE	<i>Diospyros lycioides</i> Desf.			x		x
EBENACEAE	<i>Diospyros scabrida</i> (Harv. ex Hiern) De Winter var. <i>cordata</i> (E.Mey. ex A.DC.) De Winter	LC		x		
EBENACEAE	<i>Euclea crispa</i> (Thunb.) Gürke	LC		x		
EQUISETACEAE	<i>Equisetum ramosissimum</i> Desf.	LC		x		



Family	Species	Alien status	Conservation status	PRECIS		
				3225AB & BB	Groene Vallei	Denmark
ERICACEAE	<i>Erica maesta</i> Bolus var. maesta		LC	x		
ERIOSPERMACEAE	<i>Eriospermum capense</i> (L.) Thunb			x		x
ERIOSPERMACEAE	<i>Eriospermum corymbosum</i> Baker		LC	x		
EUPHORBIACEAE	<i>Clutia</i> species				x	
EUPHORBIACEAE	<i>Euphorbia aggregata</i> A. Berger var. aggregata		LC	x		
EUPHORBIACEAE	<i>Euphorbia caterviflora</i> N.E.Br.				x	x
EUPHORBIACEAE	<i>Euphorbia mauritanica</i> L. var. mauritanica		LC	x		
EUPHORBIACEAE	<i>Euphorbia rhombifolia</i> Boiss.		LC	x		
EUPHORBIACEAE	<i>Euphorbia tridentata</i> Lam.				x	x
EUPHORBIACEAE	<i>Euphorbia wilmaniae</i> Marloth		LC	x		
FABACEAE	<i>Acacia karroo</i> Hayne		LC	x	x	
FABACEAE	<i>Indigofera alternans</i> DC. var. alternans		LC	x	x	
FABACEAE	<i>Indigofera heterophylla</i> Thunb.		LC	x		
FABACEAE	<i>Indigofera sessilifolia</i> DC.				x	x
FABACEAE	<i>Lessertia inflata</i> Harv.					x
FABACEAE	<i>Lessertia pauciflora</i> Harv. var. pauciflora		LC	x		
FABACEAE	<i>Lotononis divaricata</i> (Eckl. & Zeyh.) Benth.		LC	x		
FABACEAE	<i>Lotononis pulchella</i> (E.Mey.) B.-E. van Wyk		LC	x		
FABACEAE	<i>Lotononis pungens</i> Eckl. & Zeyh.		LC	x		
FABACEAE	<i>Lotononis</i> species				x	x
FABACEAE	<i>Melolobium candicans</i> (E.Mey.) Eckl. & Zeyh.		LC	x		
FABACEAE	<i>Melolobium microphyllum</i> (L.f.) Eckl. & Zeyh.		LC	x		
FABACEAE	<i>Sutherlandia frutescens</i> (L.) R.Br.		LC	x	x	
FABACEAE	<i>Sutherlandia humilis</i> E. Phillips & R.A. Dyer		LC	x		
FABACEAE	<i>Sutherlandia microphylla</i> Burch. ex DC.		LC	x		
GERANIACEAE	<i>Pelargonium abrotanifolium</i> (L.f.) Jacq.		LC	x		
GERANIACEAE	<i>Pelargonium aridum</i> R.A. Dyer		LC	x		
GERANIACEAE	<i>Pelargonium glutinosum</i> (Jacq.) L'Hér.		LC	x		
GERANIACEAE	<i>Pelargonium ramosissimum</i> (Cav.) Willd.		LC	x		
GERANIACEAE	<i>Pelargonium sidoides</i> DC.		Declining	x		
GERANIACEAE	<i>Pelargonium tragacanthoides</i> Burch.		LC	x		
GERANIACEAE	<i>Pelargonium zonale</i> (L.)		LC	x		

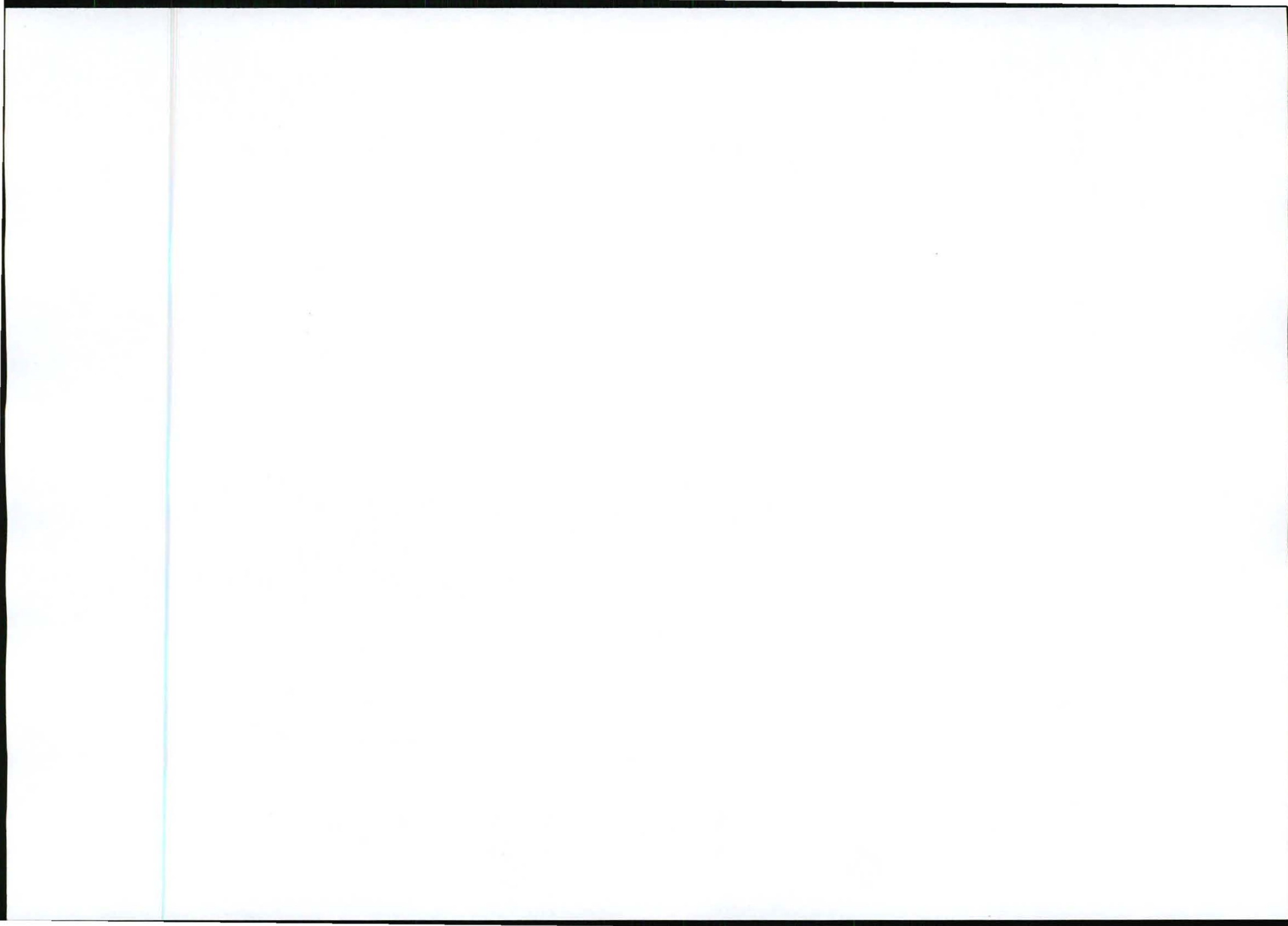


Family	Species	Conservation Alien status	Protection status	PRECIS		
				3225AB & BB	Groene Vallei	Denmark
	L'Hér.					
GRIMMIACEAE	Grimmia laevigata (Brid.) Brid.			x		
HYACINTHACEAE	Albuca nana Schönland	LC		x		
HYACINTHACEAE	Albuca species				x	x
HYACINTHACEAE	Albuca tenuifolia Baker	LC		x		
HYACINTHACEAE	Drimia anomala (Baker) Baker	LC		x		
HYACINTHACEAE	Drimia sclerophylla J.C.Manning & Goldblatt	LC		x		
HYACINTHACEAE	Drimia uniflora J.C.Manning & Goldblatt	LC		x		
HYACINTHACEAE	Eucomis comosa (Houtt.) Wehrh. var. comosa	NE		x		
HYACINTHACEAE	Lachenalia karoocica W.F.Barker ex G.D.Duncan	LC	W & E Cape	x		
HYACINTHACEAE	Lachenalia species		W & E Cape			x
HYACINTHACEAE	Massonia echinata L.f.	LC		x		
HYACINTHACEAE	Ornithogalum maculatum Jacq.	LC		x		
HYACINTHACEAE	Ornithogalum secundum Jacq.	LC		x		
HYPOXIDACEAE	Empodium plicatum (Thunb.) Garside	LC		x		
HYPOXIDACEAE	Hypoxis angustifolia Lam. var. angustifolia	LC		x		
IRIDACEAE	Freesia andersoniae (Burm.f.) N.E.Br. (1)		W & E Cape			x
IRIDACEAE	Gladiolus permeabilis D.Delaroche	LC	W & E Cape	x		x
IRIDACEAE	Hesperantha longituba (Klatt) Baker	LC	W & E Cape	x		
IRIDACEAE	Lapeirousia plicata (Jacq.) Diels subsp. plicata	LC	W & E Cape	x		
IRIDACEAE	Moraea polystachya (Thunb.) Ker Gawl.	LC	W & E Cape	x	x	x
IRIDACEAE	Tritonia dubia Eckl. ex Klatt	NT	W & E Cape	x		
JUNCACEAE	Juncus inflexus L.	LC		x		
LAMIACEAE	Ballota africana (L.) Benth.	LC		x		
LAMIACEAE	Mentha longifolia (L.) Huds.	LC		x		
LAMIACEAE	Ocimum burchellianum Benth.	LC		x		
LAMIACEAE	Salvia repens Burch. ex Benth. var. repens	LC		x		
LAMIACEAE	Salvia stenophylla Burch. ex Benth. *	NE		x		
LAMIACEAE	Stachys aethiopica L.	LC		x		
LAMIACEAE	<u>Stachys cuneata Banks ex Benth.</u>				x	x
LAMIACEAE	Stachys cymbalaria Briq.	LC		x		
LAMIACEAE	Stachys linearis Burch. ex Benth.	LC		x		

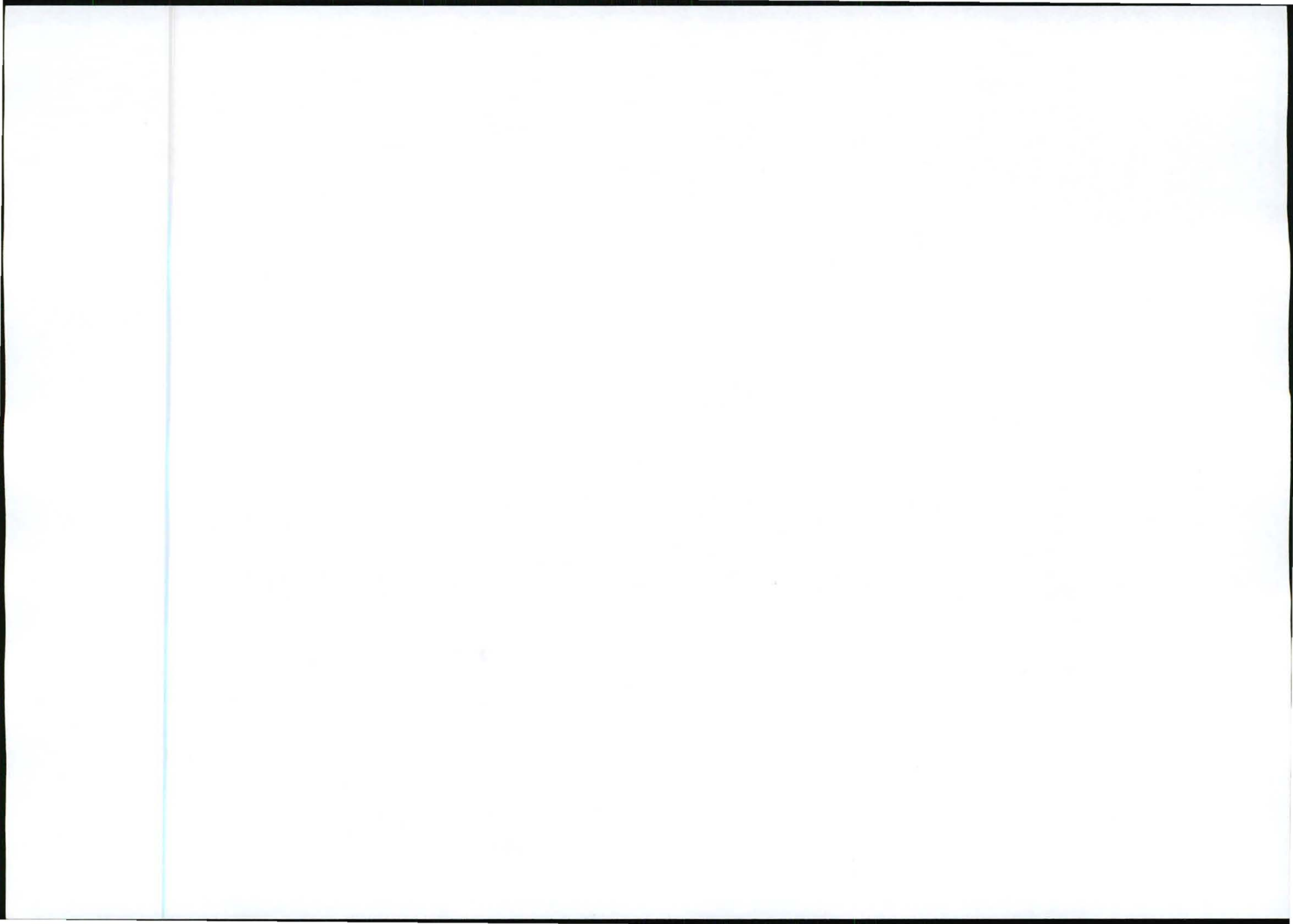




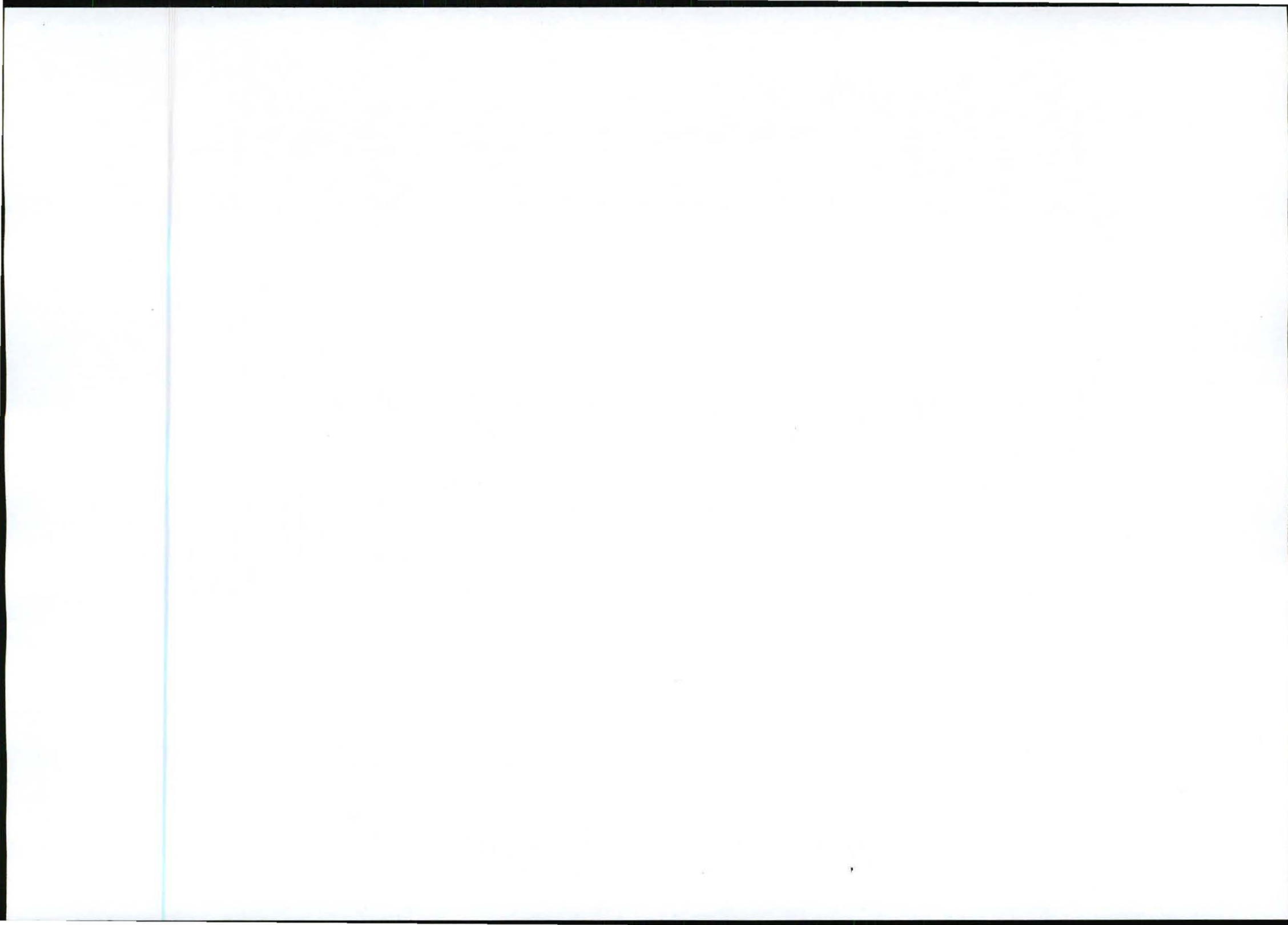
Family	Species	Alien	Conservation status	Protection status	PRECIS		
					3225AB & BB	Groene Vallei	Denmark
LAMIACEAE	Teucrium africanum Thunb.		LC		x		
LECIDEACEAE	Lecidea atromorio C.Knight				x		
LECIDEACEAE	Lecidea sarcogynoides Körb.				x		
LOBELIACEAE	Cyphia digitata (Thunb.) Willd.		LC		x		
LOBELIACEAE	Lobelia flaccida (C.Presl) A.DC.		LC		x		
LORANTHACEAE	Moquiniella rubra (A.Spreng.) Balle		LC		x		
MALVACEAE	Abutilon sonneratianum (Cav.) Sweet		LC		x		
MALVACEAE	Grewia occidentalis L. var. occidentalis		LC		x		
MALVACEAE	Grewia robusta Burch.		LC		x		
MALVACEAE	Hermannia burkei Burt Davy		LC		x		
MALVACEAE	Hermannia cernua Thunb.					x	x
MALVACEAE	Hermannia coccocarpa (Eckl. & Zeyh.) Kuntze					x	
MALVACEAE	Hermannia cuneifolia Jacq. var. glabrescens (Harv.) I. Verd.		LC		x		
MALVACEAE	Hermannia cuneifolia Jacq. var. cuneifolia				x		x
MALVACEAE	Hermannia glabrata L.f.		LC		x		
MALVACEAE	Hermannia linearifolia Harv.		LC		x	x	x
MALVACEAE	Hermannia multiflora Jacq.		LC		x		
MALVACEAE	Hibiscus pusillus Thunb.		LC		x		
MALVACEAE	Malva parviflora L. var. parviflora	*	NE		x		
MELIANTHACEAE	Melianthus comosus Vahl		LC		x		
MESEMBRYANTHEMACEAE	Aptenia geniculiflora (L.) Bittrich ex Gerbaulet		LC		W & E Cape	x	
MESEMBRYANTHEMACEAE	Chasmatophyllum musculinum (Haw.) Dinter & Schwantes		LC		W & E Cape	x	x
MESEMBRYANTHEMACEAE	Delosperma floribundum L.Bolus		LC		W & E Cape	x	
MESEMBRYANTHEMACEAE	Delosperma peersii Lavis		LC		W & E Cape	x	
MESEMBRYANTHEMACEAE	Drosantherum floribundum (Haw.) Schwantes		LC		W & E Cape	x	
MESEMBRYANTHEMACEAE	Drosantherum lique (N.E.Br.) Schwantes		LC		W & E Cape	x	
MESEMBRYANTHEMACEAE	Malephora latipetala (L.Bolus) H.Jacobsen & Schwantes		LC		W & E Cape	x	
MESEMBRYANTHEMACEAE	Malephora lutea (Haw.) Schwantes		LC		W & E Cape	x	
MESEMBRYANTHEMACEAE	Mesembryanthemum aitonis Jacq.		LC		W & E Cape	x	
MESEMBRYANTHEMACEAE	Mesembryanthemum crystallinum L.		LC		W & E Cape	x	
MESEMBRYANTHEMACEAE	Mestoklema illepidum N.E.Br. ex Glen		LC		W & E Cape	x	



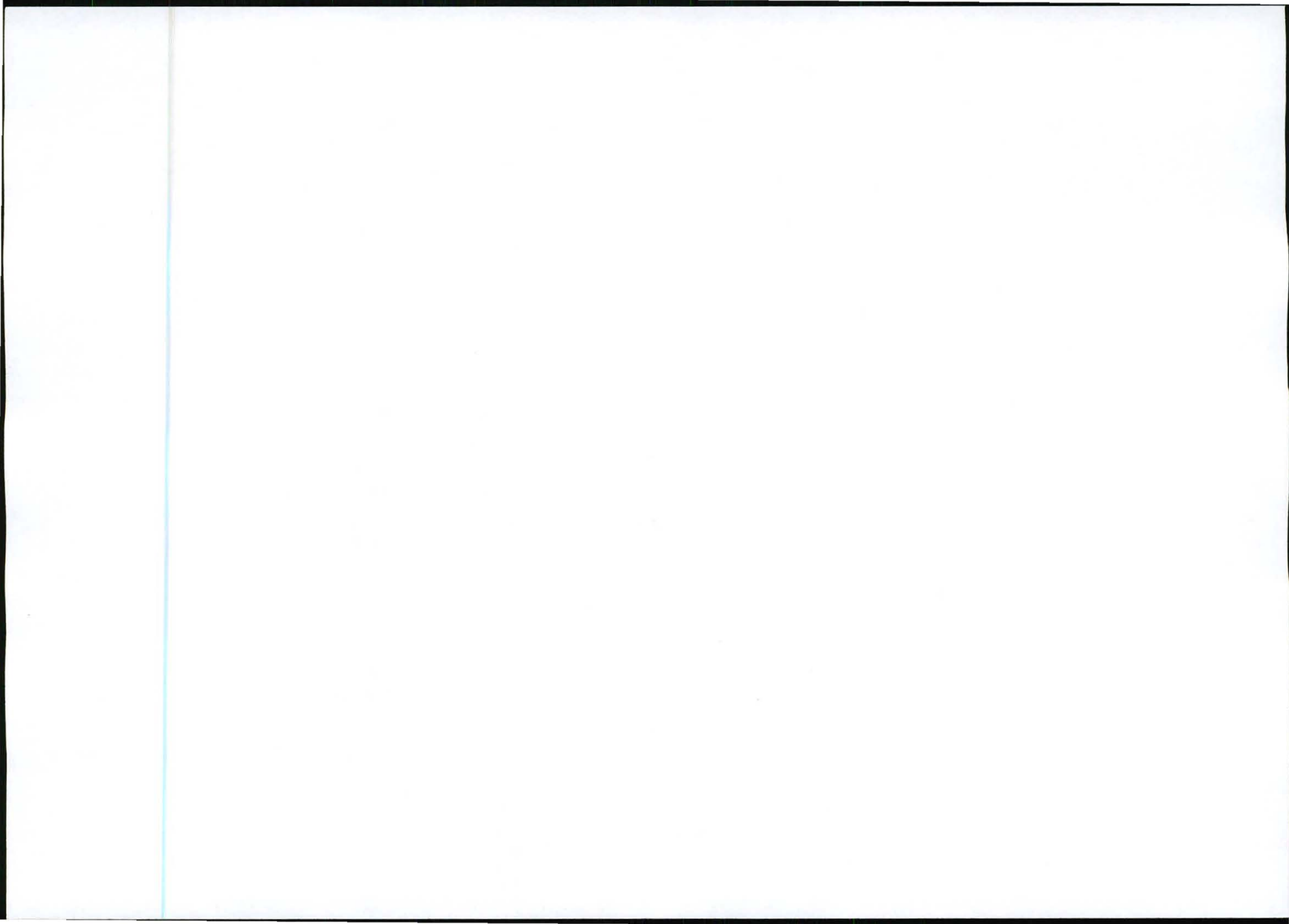
Family	Species	Alien status	Conservation status	Protection status	PRECIS		
					3225AB & BB	Groene Vallei	Denmark
MESEMBRYANTHEMACEAE	Mestoklema tuberosum (L.) N.E.Br. ex Glen			W & E Cape			x
MESEMBRYANTHEMACEAE	Gerbaulet Psilocaulon articulatum (Thunb.) N.E.Br.	LC		W & E Cape x			
MESEMBRYANTHEMACEAE	Psilocaulon coriarium (Burch. ex N.E.Br.) N.E.Br.	LC		W & E Cape x			
MESEMBRYANTHEMACEAE	Ruschia cradockensis (Kuntze) H.E.K.Hartmann & Stüber	LC		W & E Cape x			
MESEMBRYANTHEMACEAE	Ruschia grisea (L.Bolus) Schwantes	LC		W & E Cape x			
MESEMBRYANTHEMACEAE	Ruschia spinosa (L.) Dehn Stomatium bolusiae			W & E Cape			x
MESEMBRYANTHEMACEAE	Schwantes Trichodiadema pomeridianum	LC		W & E Cape x			
MESEMBRYANTHEMACEAE	L.Bolus Trichodiadema rogersiae	LC		W & E Cape x	x		x
MESEMBRYANTHEMACEAE	L.Bolus Hypertelis salsoloides (Burch.) Adamson var. salsoloides	DDT		W & E Cape x			
MOLLUGINACEAE	Limeum aethiopicum Burm.f. var. intermedium Friedrich	LC			x		x
MOLLUGINACEAE	Boerhavia cordobensis Kuntze	*	NE		x		
OXALIDACEAE	Oxalis bifurca Lodd. var. angustiloba Sond.		LC		x		
OXALIDACEAE	Oxalis bifurca Lodd. var. bifurca		LC		x		
OXALIDACEAE	Oxalis depressa Eckl. & Zeyh. Oxalis smithiana Eckl. & Zeyh.		LC		x		
OXALIDACEAE	Oxymitra cristata Garside ex Perold				x		
PAPAVERACEAE	Argemone ochroleuca Sweet *		NE		x		
PAPAVERACEAE	Papaver aculeatum Thunb. Paraparmelia asilaris (Brusse) Elix		LC		x		
PARMELIACEAE	Paraparmelia molybdiza (Nyl.) Elix & J.Johnst.				x		
PARMELIACEAE	Paraparmelia vanderbylii (Zahlbr.) Elix & J.Johnst.				x		
PARMELIACEAE	Xanthomaculina hottentotta (Ach.) Hale				x		
PARMELIACEAE	Xanthoparmelia domokosii (Gyeln.) Hale				x		
PARMELIACEAE	Xanthoparmelia marroninipuncta (Brusse) Hale				x		
PEDALIACEAE	Sesamum capense Burm.f.		LC		x		



Family	Species	Alien	Conservation	Protection	PRECIS			
					status	status	3225AB & BB	Groene Vallei
PLANTAGINACEAE	<i>Plantago lanceolata</i> L.		LC			x		
	<i>Agrostis lachnantha</i> Nees var. <i>lachnantha</i>		LC			x		
POACEAE	<i>Aristida adscensionis</i> L.		LC			x		x
POACEAE	<i>Aristida congesta</i> Roem. & Schult.		LC			x		x
POACEAE	<i>Aristida diffusa</i> Trin.		LC			x	x	x
POACEAE	<i>Briza maxima</i> L.	*	NE			x		
POACEAE	<i>Bromus pectinatus</i> Thunb.		LC			x		
POACEAE	<i>Chloris virgata</i> Sw.		LC			x		
	<i>Cymbopogon marginatus</i> (Steud.) Stapf ex Burt Davy		LC			x		
POACEAE	<i>Cymbopogon pospischilii</i> (K.Schum.) C.E.Hubb.	*	NE			x		
POACEAE	<i>Cynodon dactylon</i> (L.) Pers.						x	
POACEAE	<i>Digitaria eriantha</i> Steud.		LC			x	x	x
POACEAE	<i>Ehrharta calycina</i> Sm.		LC			x		
	<i>Ehrharta erecta</i> Lam. var. <i>erecta</i>		LC			x		
POACEAE	<i>Enneapogon scoparius</i> Stapf		LC			x	x	
POACEAE	<i>Eragrostis barrelieri</i> Daveau	*	NE			x		
POACEAE	<i>Eragrostis chloromelas</i> Steud.		LC			x		
	<i>Eragrostis curvula</i> (Schrud.) Nees		LC			x		
	<i>Eragrostis lehmanniana</i> Nees var. <i>lehmanniana</i>		LC			x	x	x
POACEAE	<i>Eragrostis obtusa</i> Munro ex Ficalho & Hiem		LC			x	x	x
	<i>Eustachys paspaloides</i> (Vahl) Lanza & Mattei		LC			x	x	
POACEAE	<i>Fingerhuthia africana</i> Lehm.		LC			x	x	
	<i>Heteropogon contortus</i> (L.) Roem. & Schult.		LC			x	x	x
POACEAE	<i>Hyparrhenia hirta</i> (L.) Stapf							x
POACEAE	<i>Melica decumbens</i> Thunb.		LC			x		
	<i>Melinis nerviglumis</i> (Franch.) Zizka		LC			x		
POACEAE	<i>Melinis repens</i> (Willd.) Zizka		LC			x		
	<i>Merxmuellera disticha</i> (Nees) Conert		LC			x		
POACEAE	<i>Microchloa caffra</i> Nees		LC			x		
POACEAE	<i>Microchloa kunthii</i> Desv.		LC			x		
	<i>Miscanthus capensis</i> (Nees) Andersson		LC			x		
POACEAE	<i>Oropetium capense</i> Stapf						x	x
POACEAE	<i>Panicum coloratum</i> L. var. <i>coloratum</i>		LC			x		
	<i>Pennisetum sphacelatum</i> (Nees) T.Durand & Schinz		LC			x		
POACEAE	<i>Pentaschistis airoides</i> (Nees)		LC			x		

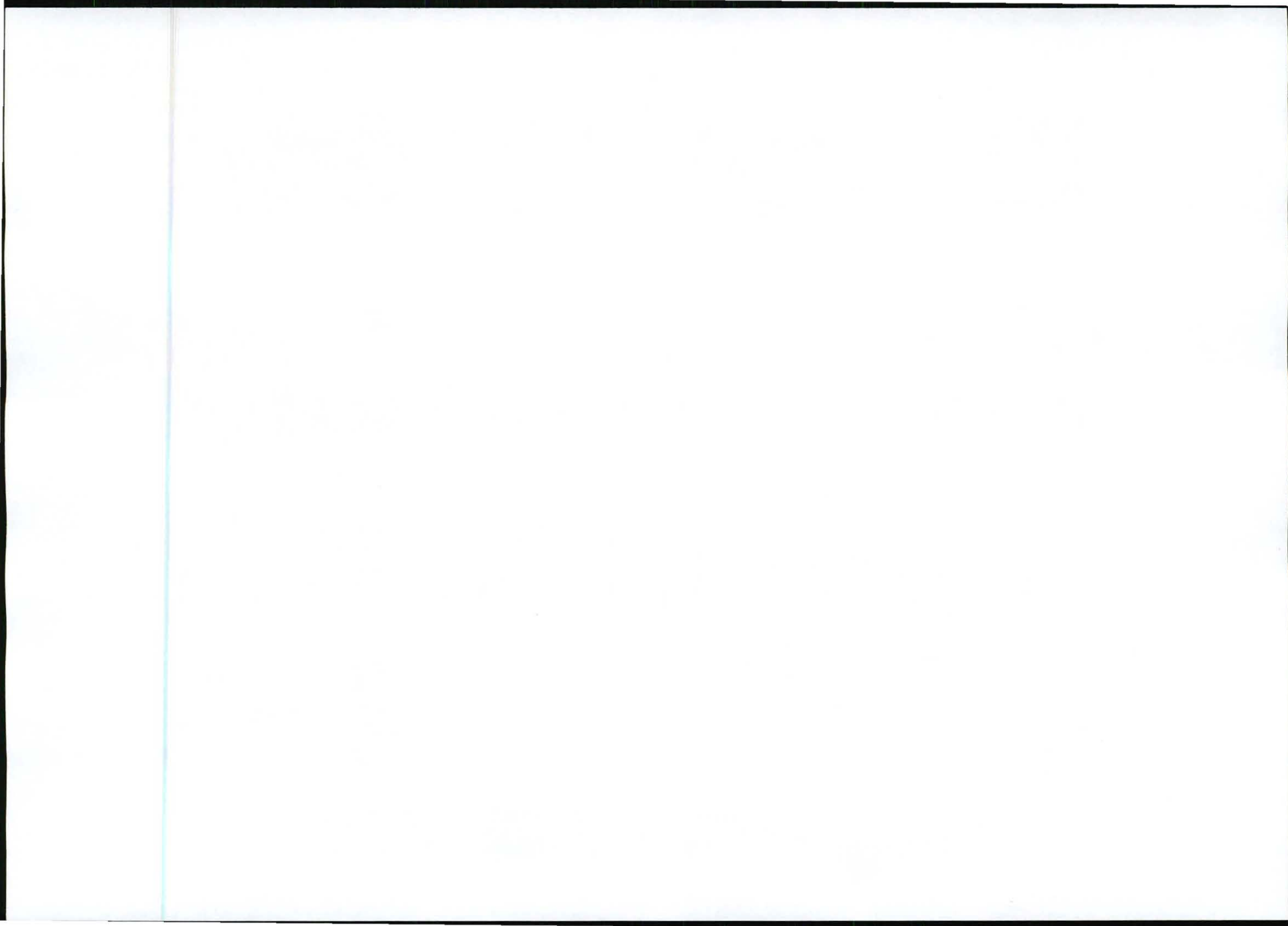


Family	Species	Alien	Conservation status	Protection status	PRECIS		
					3225AB & BB	Groene Vallei	Denmark
	Stapf						
POACEAE	Pentstemon glandulosa (Schrad.) H.P.Linder		LC		x		
POACEAE	Phragmites australis (Cav.) Steud.		LC		x		
POACEAE	Poa annua L.	*	NE		x		
POACEAE	Polypogon monspeliensis (L.) Desf.	*	NE		x		
POACEAE	Polypogon viridis (Gouan) Breistr.	*	NE		x		
POACEAE	Schismus inermis (Stapf) C.E.Hubb.		LC		x		
POACEAE	Setaria sphacelata (Schumach.) Stapf & C.E.Hubb. ex M.B.Moss var. sphacelata		LC		x		
POACEAE	Setaria sphacelata (Schumach.) Stapf & C.E.Hubb. ex M.B.Moss var. torta (Stapf) Clayton		LC		x		
POACEAE	Sporobolus fimbriatus (Trin.) Nees		LC		x	x	x
POACEAE	Stipa dregeana Steud. var. dregeana		LC		x		
POACEAE	Stipa dregeana Steud. var. elongata (Nees) Stapf		LC		x		
POACEAE	Stipagrostis ciliata (Desf.) De Winter var. capensis (Trin. & Rupr.) De Winter		LC		x		
POACEAE	Stipagrostis obtusa (Delile) Nees		LC		x		
POACEAE	Tetrachne dregei Nees		LC		x		
POACEAE	Themeda triandra Forssk.		LC		x		
POACEAE	Tragus berteronianus Schult.		LC		x		
POACEAE	Tragus koelerioides Asch.		LC		x	x	x
POACEAE	Tribolium hispidum (Thunb.) Desv.		LC		x		
POLYGALACEAE	Muraltia macrocarpa Eckl. & Zeyh.		LC		x		
POLYGALACEAE	Polygala asbestina Burch.		LC		x		
POLYGALACEAE	Polygala gracilentata Burt Davy		LC		x		
POLYGALACEAE	Polygala leptophylla Burch. var. leptophylla		LC		x		x
POLYGALACEAE	Polygala virgata Thunb. var. virgata		LC		x		
POLYGONACEAE	Rumex lanceolatus Thunb.		LC		x		
PORTULACACEAE	Anacampseros arachnoides (Haw.) Sims		LC	W & E Cape	x		x
POTTIACEAE	Triquetrella tristicha (Müll.Hal.) Müll.Hal.				x		
PTERIDACEAE	Cheilanthes eckloniana (Kunze) Mett.		LC		x		

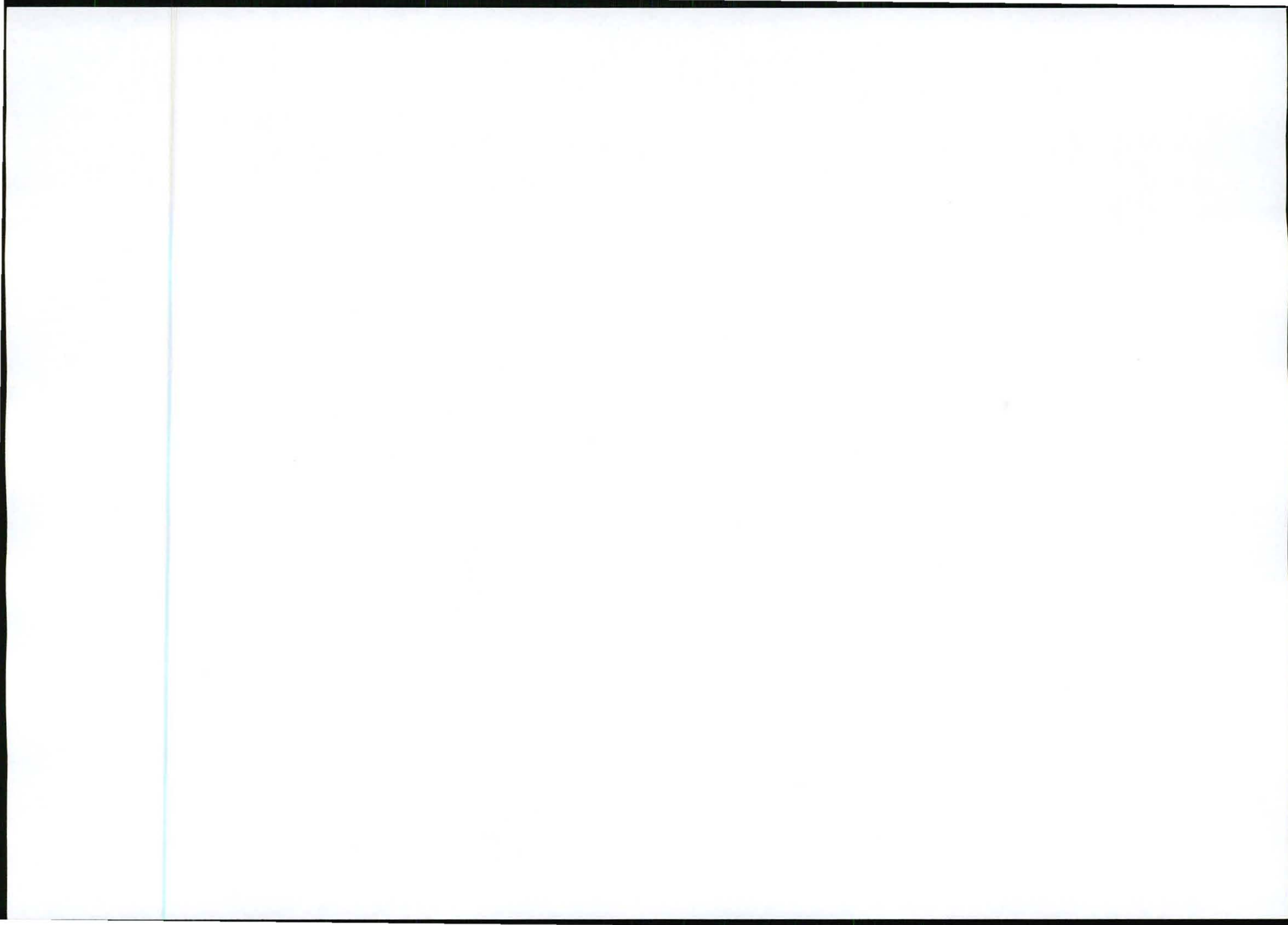




Family	Species	Alien status	Conservation status	Protection status	PRECIS		
					3225AB & BB	Groene Vallei	Denmark
PTERIDACEAE	<i>Cheilanthes hirta</i> Sw.		LC		x	x	
PTERIDACEAE	<i>Cheilanthes induta</i> Kunze		LC		x		
PTERIDACEAE	<i>Cheilanthes involuta</i> (Sw.) Schelpe & N.C. Anthony var. <i>involuta</i>		LC		x		
PTERIDACEAE	<i>Cheilanthes multifida</i> (Sw.) Sw.		LC		x		
PTERIDACEAE	<i>Cheilanthes parviloba</i> (Sw.) Sw.		LC		x		
PTERIDACEAE	<i>Pellaea calomelanos</i> (Sw.) Link var. <i>calomelanos</i>		LC		x		
PTERIDACEAE	<i>Pellaea leucomelas</i> (Mett. ex Kuhn) Baker		LC		x		
PTYCHOMITRIACEAE	<i>Ptychomitrium cucullatifolium</i> (Müll.Hal.) A. Jaeger				x		
RANUNCULACEAE	<i>Clematis brachiata</i> Thunb.		LC		x		
RANUNCULACEAE	<i>Ranunculus multifidus</i> Forssk. *		NE		x		
RHAMNACEAE	<i>Rhamnus prinoides</i> L'Hér.		LC		x		
RICCIACEAE	<i>Riccia argenteolimbata</i> O.H. Volk & Perold				x		
RICCIACEAE	<i>Riccia runssorensis</i> Steph.				x		
RICCIACEAE	<i>Riccia simii</i> Perold				x		
RUBIACEAE	<i>Anthospermum rigidum</i> Eckl. & Zeyh.		LC		x		
RUBIACEAE	<i>Galium capense</i> Thunb.		LC		x		
RUBIACEAE	<i>Nenax microphylla</i> (Sond.) Salter					x	x
RUTACEAE	<i>Agathosma ovata</i> (Thunb.) Pillans		LC		x		
SALICACEAE	<i>Salix mucronata</i> Thunb.		LC		x		
SANTALACEAE	<i>Thesium hystrix</i> A.W. Hill						x
SANTALACEAE	<i>Thesium impeditum</i> A.W. Hill		LC		x		
SCROPHULARIACEAE	<i>Alectra sessiliflora</i> (Vahl) Kuntze					x	
SCROPHULARIACEAE	<i>Aptosimum procumbens</i> (Lehm.) Steud.		LC		x	x	x
SCROPHULARIACEAE	<i>Chaenostoma halimifolium</i> Benth.		LC		x		
SCROPHULARIACEAE	<i>Diascia capsularis</i> Benth.		LC		x		
SCROPHULARIACEAE	<i>Hebenstretia dura</i> Choisy		LC		x		
SCROPHULARIACEAE	<i>Jamesbrittenia atropurpurea</i> (Benth.) Hilliard		LC		x	x	x
SCROPHULARIACEAE	<i>Jamesbrittenia crassicaulis</i> (Benth.) Hilliard		LC		x		
SCROPHULARIACEAE	<i>Jamesbrittenia filicaulis</i> (Benth.) Hilliard		LC		x		
SCROPHULARIACEAE	<i>Jamesbrittenia tysonii</i> (Hiem) Hilliard		LC		x	x	x
SCROPHULARIACEAE	<i>Manulea crassifolia</i> Benth.		LC		x		
SCROPHULARIACEAE	<i>Nemesia affinis</i> Benth.		LC		x		
SCROPHULARIACEAE	<i>Nemesia fruticans</i> (Thunb.)		LC		x		



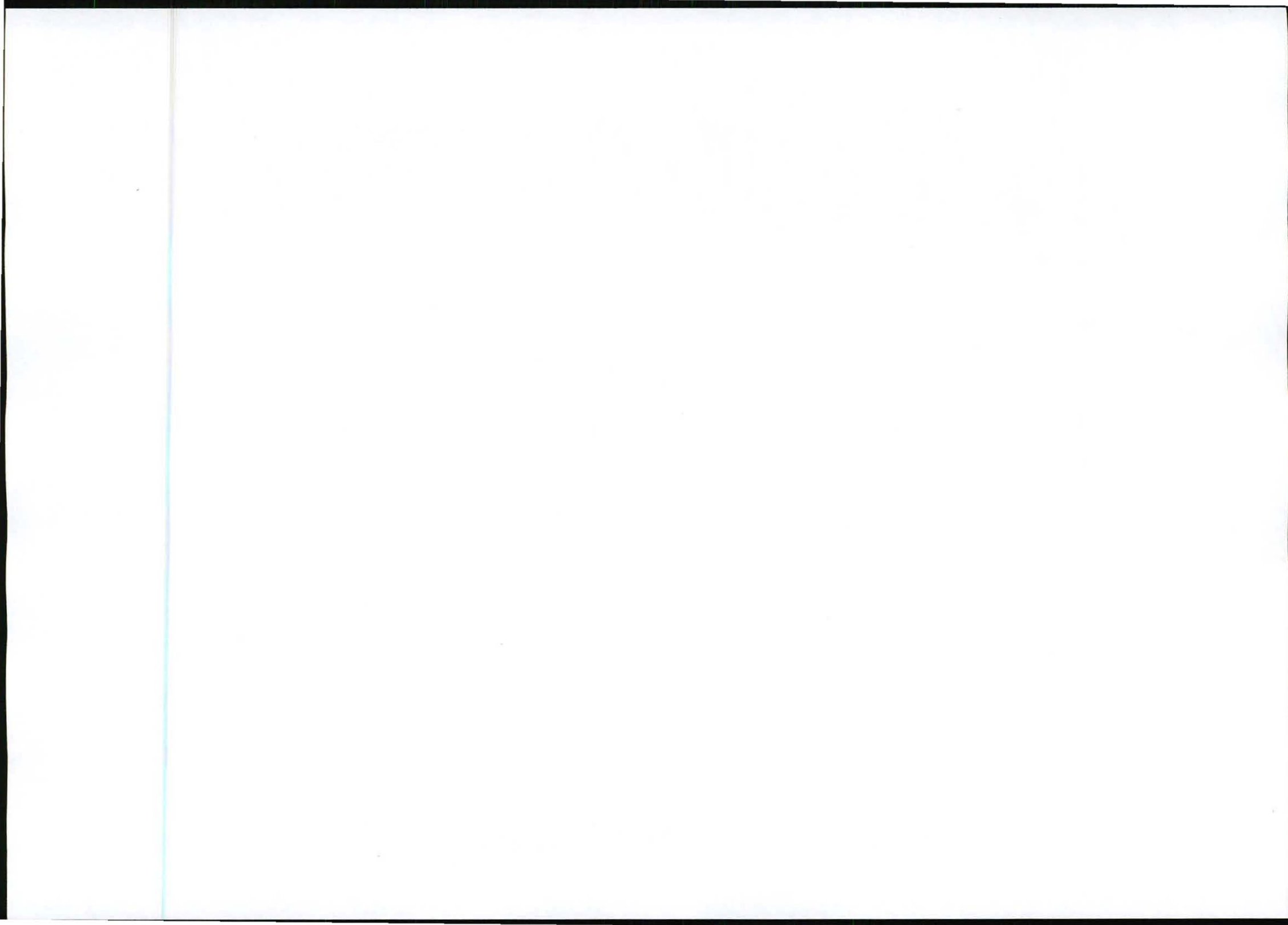
Family	Species	Alien	Conservation status	Protection status	PRECIS			
					3225AB & BB	Groene Vallei	Denmark	
	Benth.							
SCROPHULARIACEAE	Selago acocksii Hilliard		LC		x			
SCROPHULARIACEAE	Selago albida Choisy		LC		x	x	x	
SCROPHULARIACEAE	Selago divaricata L.f.		LC		x			
SCROPHULARIACEAE	Selago geniculata L.f.		LC		x			
SCROPHULARIACEAE	Selago saxatilis E.Mey.		LC		x			
	Sutera halimifolia (Benth.) Kuntze						x	
SCROPHULARIACEAE	Sutera species						x	
	Veronica anagallis-aquatica L.		LC		x			
SCROPHULARIACEAE	Walafrida species					x		
SOLANACEAE	Datura stramonium L.	*	NE		x			
SOLANACEAE	Ehretia rigida (Thunb.) Druce					x		
SOLANACEAE	Lycium cinereum Thunb.		LC		x	x	x	
SOLANACEAE	Lycium horridum Thunb.		LC		x			
SOLANACEAE	Lycium pumilum Dammer		LC		x			
	Lycium schizocalyx C.H.Wright		LC		x			
SOLANACEAE	Solanum nigrum L.	*	NE		x			
	Solanum tomentosum L. var. tomentosum		LC		x	x	x	
SOLANACEAE	Withania somnifera (L.) Dunal		LC		x			
	Gnidia polycephala (C.A.Mey.) Gilg		LC		x			
	Chascanum pinnatifidum (L.f.) E.Mey. var. pinnatifidum		LC		x			
VERBENACEAE	Lantana rugosa Thunb.		LC		x			
	Viscum continuum E.Mey. ex Sprague		LC		x			
VISCACEAE	Cyphostemma quinatum (Dryand.) Desc. ex Wild & R.B.Drumm.		LC		x			
VITACEAE								
<b>TOTAL COUNTS</b>			<b>412</b>	<b>20</b>	<b>47</b>	<b>370</b>	<b>70</b>	<b>69</b>



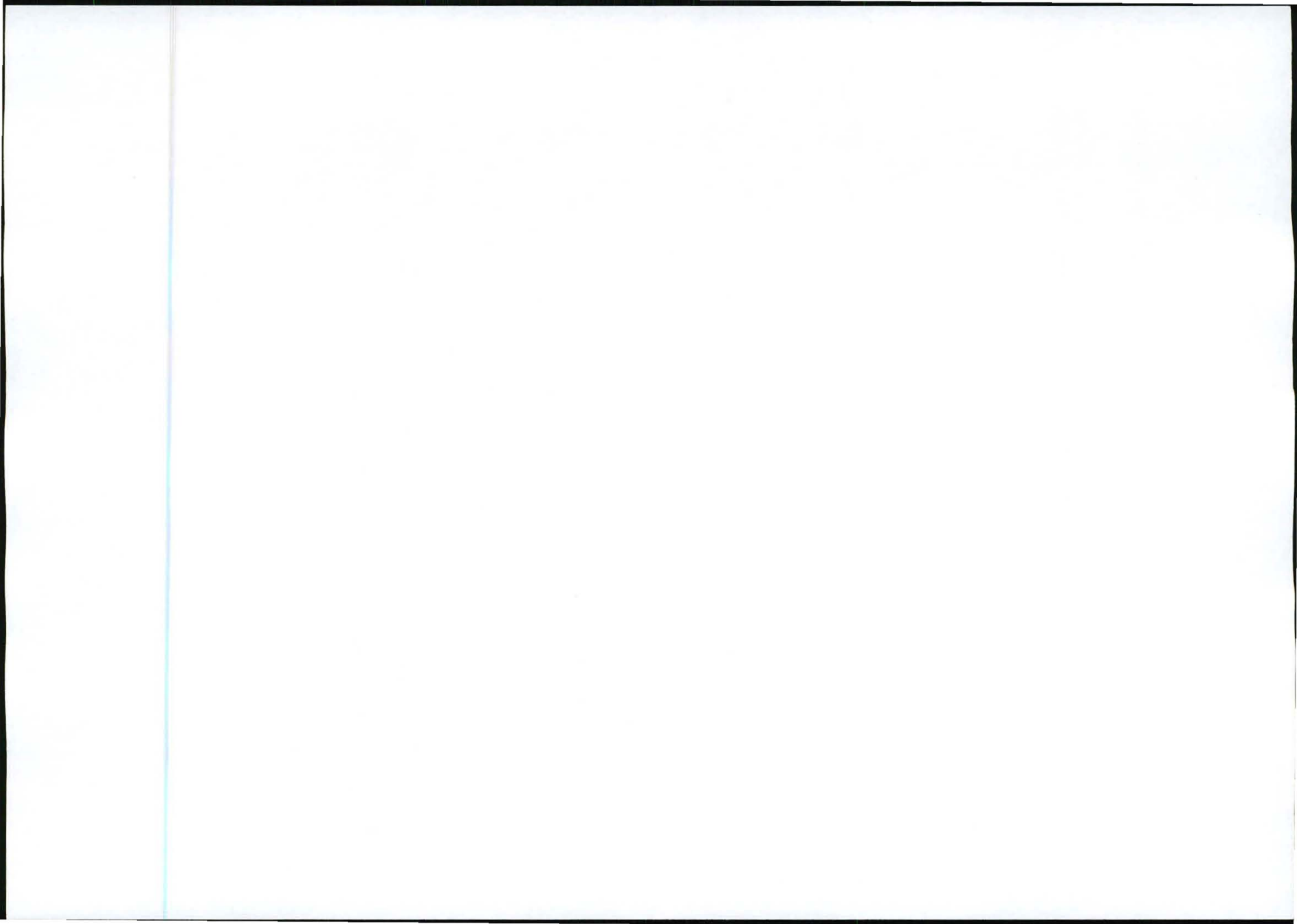
**Appendix 3a. Environment and plant species in sample plots  
on proposed Drill Grid on farm Denmark, Prospecting Right 37**

Species are arranged in order of decreasing frequency. Meanings of codes in table are as follows: Soil texture: fsa = fine sand, msa = medium sand, sisa = silty sand, soil colour: bf=buff, br = brown, or= orange; rock type: sast = sandstone; species cover values in body of table are in percentages of projected canopy cover. Freq. = the number of plots in which a given plant species occurred. Cover of bedrock and stones is given in percentage of plot area. Drainage is coded from 1 (poor) to 5 (good). Richness is the number of species in the 2500 m<sup>2</sup> plot.

Plot number	100	101	102	103	104	105
Tasman Pacific Site Code	37	37	37	37	37	37
Farm	49Denmark Cradock	49Denmark Cradock	49Denmark Cradock	49Denmark Cradock	49Denmark Cradock	49Denmark Cradock
Date (year/month/day)	20090915	20090915	20090915	20090915	20090915	20090915
Relevé area (sq m)	25	25	25	25	25	25
Altitude (m)	884	880	885	884	888	893
Aspect (degrees)	SE	NE	N	NE	0	NW
Slope (degrees)	2	2	2	2	0	5
Geology	sast	sast	sast	sast	sast	sast
Soil texture	sisa	sisa	sa	sacl	sa	sa
Soil colour	orbu	orbu	bu	bu	bu	bu
Drainage	good	good	mod	mod	mod	good
Bedrock cover (%)	25	30	25	0	25	5
Stone cover (%)	50	20	10	0	50	5
Vegetation cover total (%)	40	35	30	30	40	35
Species richness	30	34	29	23	26	14
<i>Aristida diffusa</i>	15	4	10	0.2	10	1
<i>Stachys cuneata</i>	6	15	12		1	6
<i>Eriocephalus ericoides</i>	1	2	3	20	15	2
<i>Tragus koelerioides</i>	6	4	0.2	1	2	
<i>Oropetium capense</i>	0.1	0.2	1	0.2	0.2	0.2
<i>Moraea polystachya</i>	0.1	0.2		0.1	0.2	0.1
<i>Blepharis mitrata</i>	0.2		0.2	0.2	0.2	
<i>Selago albida</i>	0.1			0.2	0.2	3
<i>Gazania krebsiana</i>	0.1	0.1	0.1	0.2		
<i>Asparagus suaveolens</i>	0.1		0.1		0.2	0.1
<i>Eragrostis lehmanniana</i>	0.1	2	0.2		0.2	
<i>Heteropogon contortus</i>	0.1	2	0.1		0.2	
<i>Lotononis species</i>	0.1	0.2	0.1		0.1	
<i>Hermannia cernua</i>		0.1		0.1	0.1	0.1
<i>Nenax microphylla</i>	3	2	0.2			
<i>Thesium hystrix</i>	0.2			0.1	0.1	
<i>Pentzia incana</i>	1	0.1		4		

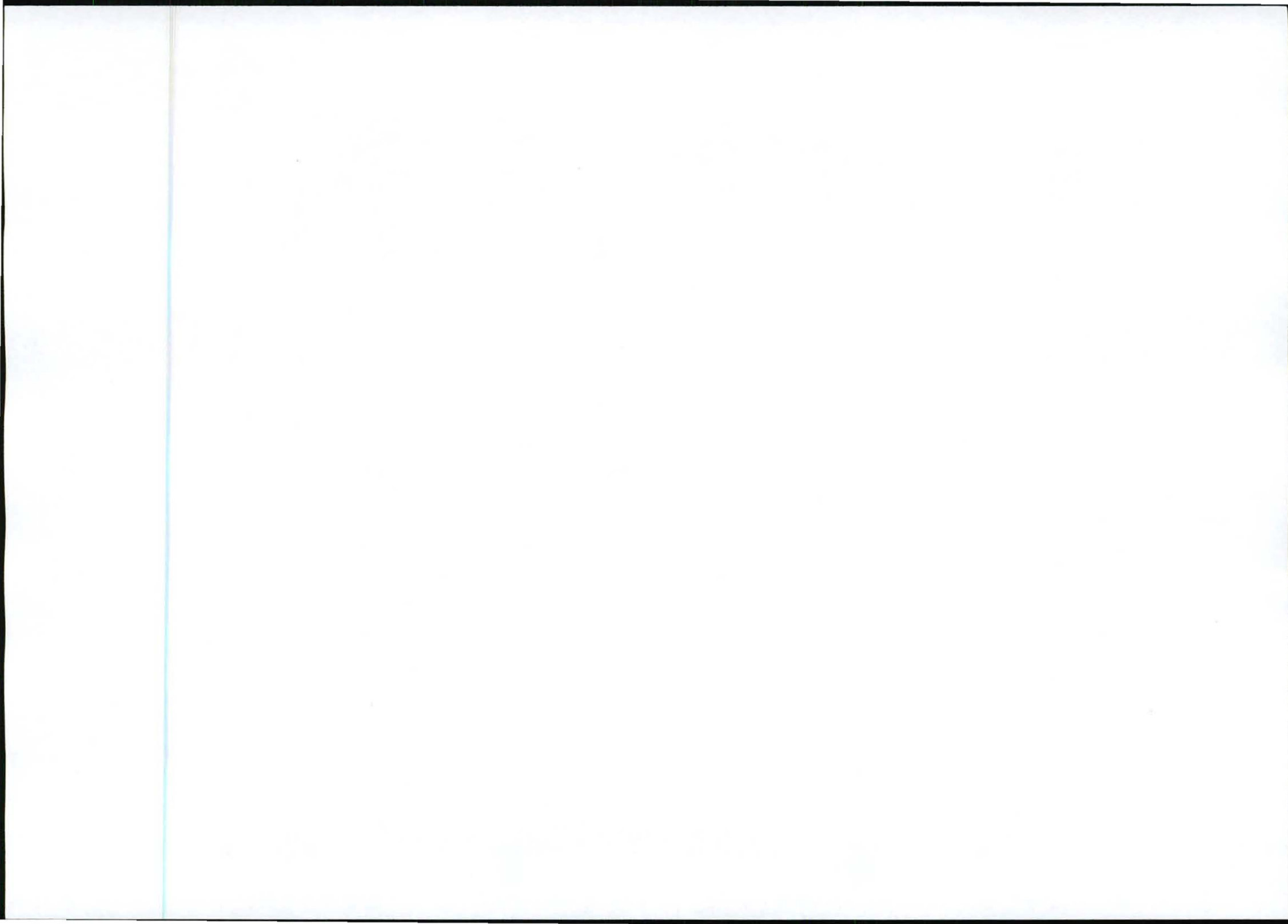


Plot number	100	101	102	103	104	105
Tasman Pacific Site Code	37	37	37	37	37	37
	49Denmark	49Denmark	49Denmark	49Denmark	49Denmark	49Denmark
Farm	Cradock	Cradock	Cradock	Cradock	Cradock	Cradock
<i>Helichrysum dregeanum</i>	1		0.1	0.1		
<i>Jamesbrittenia tysonii</i>	0.1			0.1	0.1	
<i>Ruschia spinosa</i>	0.1	2	0.2			
<i>Lightfootia species</i>	0.1	0.2			0.1	
<i>Dianthus species</i>	0.1	0.1			0.1	
<i>Lycium cinereum</i>				3	1	2
<i>Lachenalia species</i>		0.1	0.2			0.2
<i>Helichrysum trilineatum</i>		0.2	1		0.2	
<i>Pentzia sphaerocephala</i>	4	1				
<i>Aptosimum procumbens</i>	2			2		
<i>Hermannia linifolia</i>	0.1			1		
<i>Eriospermum capense</i>		1		0.1		
<i>Lessertia inflata</i>			0.2	0.1		
<i>Berkheya heterophylla</i>				0.1	0.1	
<i>Dimorphotheca cuneata</i>				0.1	0.1	
<i>Hermannia cuneifolia</i> v <i>cuneifolia</i>			1			4
<i>Euphorbia tridentata</i>					0.2	0.1
<i>Osteospermum leptolobum</i>					0.1	0.1
<i>Indigofera sessilifolia</i>		0.2			0.1	
<i>Pegolettia retrofracta</i>		0.1	0.2			
<i>Felicia muricata</i>		0.1	0.1			
<i>Rhus burchellii</i>		0.1	0.1			
<i>Carissa haematocarpa</i>		0.1	0.1			
<i>Diospyros lycioides</i>		0.1	0.1			
<i>Aristida congesta</i>			0.2		0.2	
<i>Sporobolus fimbriatus</i>	0.2					
<i>Jamesbrittenia atropurpurea</i>	0.2					
<i>Phymaspermum aciculare</i>	0.2					
<i>Gladiolus permeabilis</i> s <i>edulis</i>	0.1					
<i>Polygala leptophylla</i>	0.1					
<i>Sutera species</i>	0.1					
<i>Aristida adscensionis</i>				0.2		
<i>Eragrostis obtusa</i>				0.1		
<i>Euphorbia caterviflora</i>				0.1		
<i>Limeum aethiopicum</i>						0.1
<i>Chasmatophyllum musculinum</i>		0.2				
<i>Chrysocoma ciliata</i>		0.1				
<i>Digitaria eriantha</i>		0.1				
<i>Solanum tomentosum</i>		0.1				
<i>Albuca species</i>		0.1				
<i>Asparagus retrofractus</i>		0.1				
<i>Hyparrhenia hirta</i>		0.1				
<i>Sutera halimifolia</i>		0.1				
<i>Crassula species</i>			0.2			
<i>Trichodiadema setuliferum</i>			0.1			
<i>Heliophila species</i>			0.1			





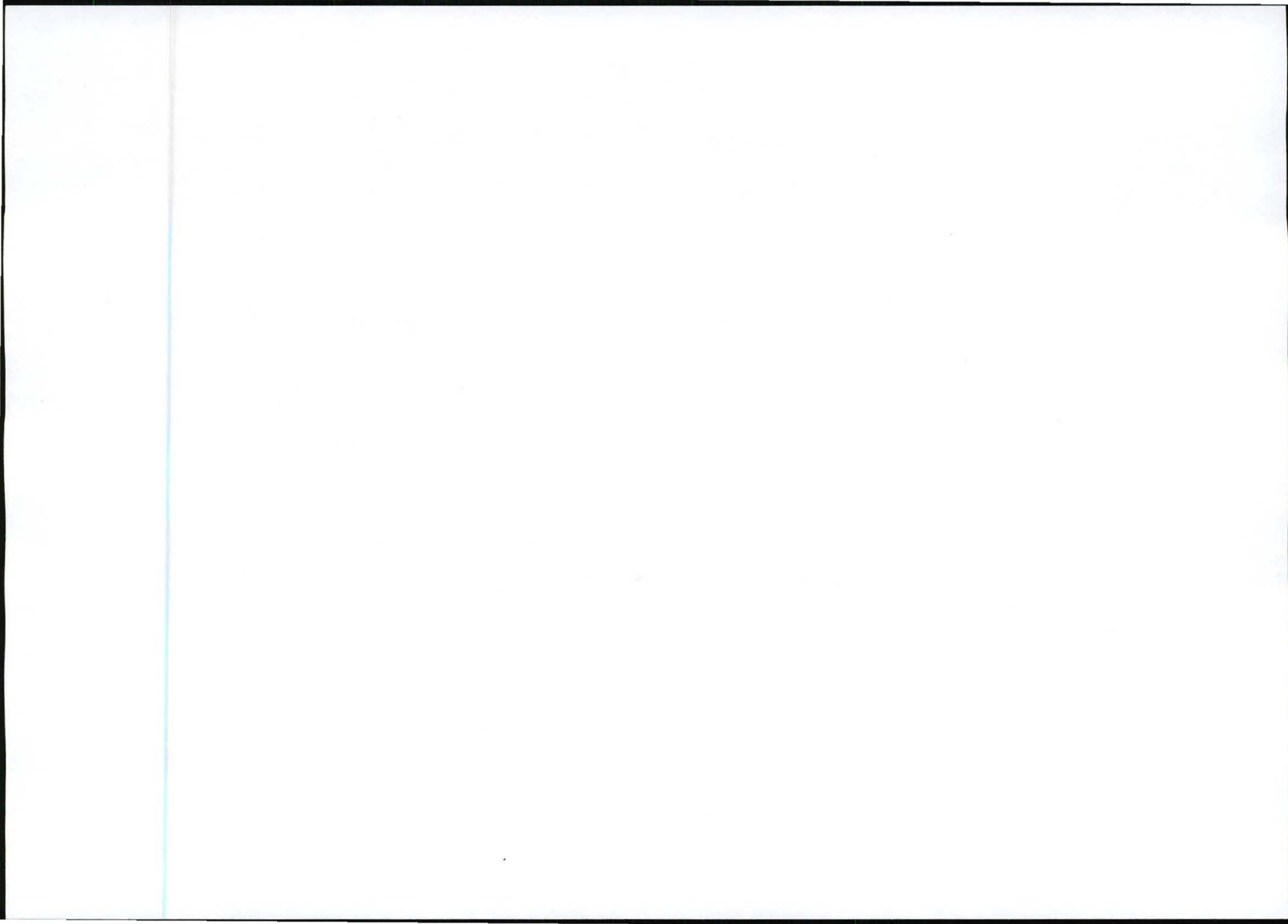
Plot number	100	101	102	103	104	105
Tasman Pacific Site Code	37	37	37	37	37	37
Farm	49Denmark Cradock	49Denmark Cradock	49Denmark Cradock	49Denmark Cradock	49Denmark Cradock	49Denmark Cradock
<i>Anacampseros albidiflora</i>			0.1			
<i>Hypertelis salsoloides</i>			0.1			
<i>Mestoklema tuberosum</i>					0.1	



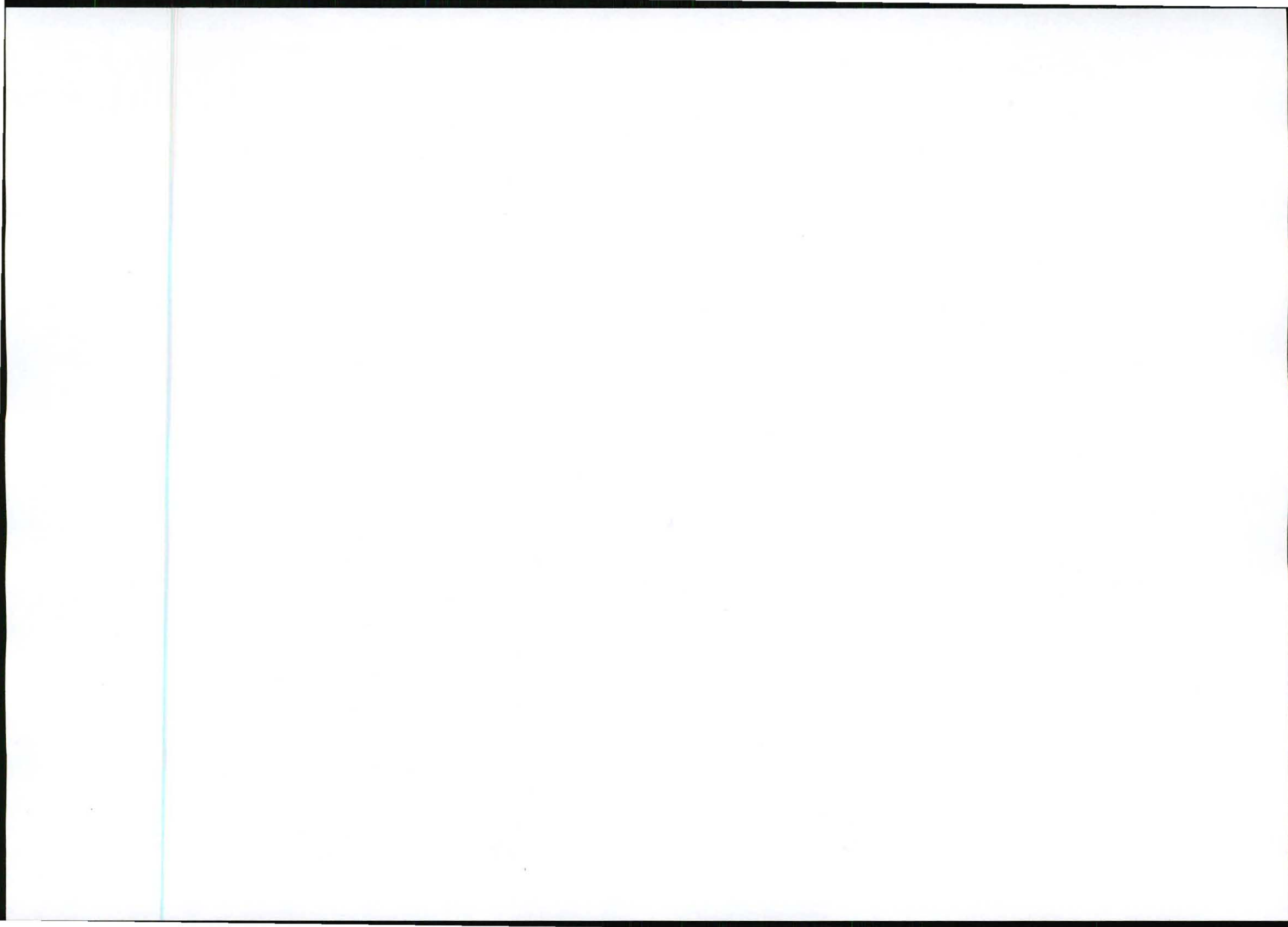
**Appendix 3b. Environment and plant species in sample plots  
in Proposed Drill Grid on farm Groene Vallei, Prospecting  
Right 37**

Species are arranged in order of decreasing frequency. Meanings of codes in table are as follows: Soil texture: fsa = fine sand, msa = medium sand, sisa = silty sand, soil colour: bf=buff, br = brown, or= orange; rock type: sast = sandstone; species cover values in body of table are in percentages of projected canopy cover. Freq. = the number of plots in which a given plant species occurred. Cover of bedrock and stones is given in percentage of plot area. Drainage is coded from 1 (poor) to 5 (good). Richness is the number of species in the 2500 m<sup>2</sup> plot.

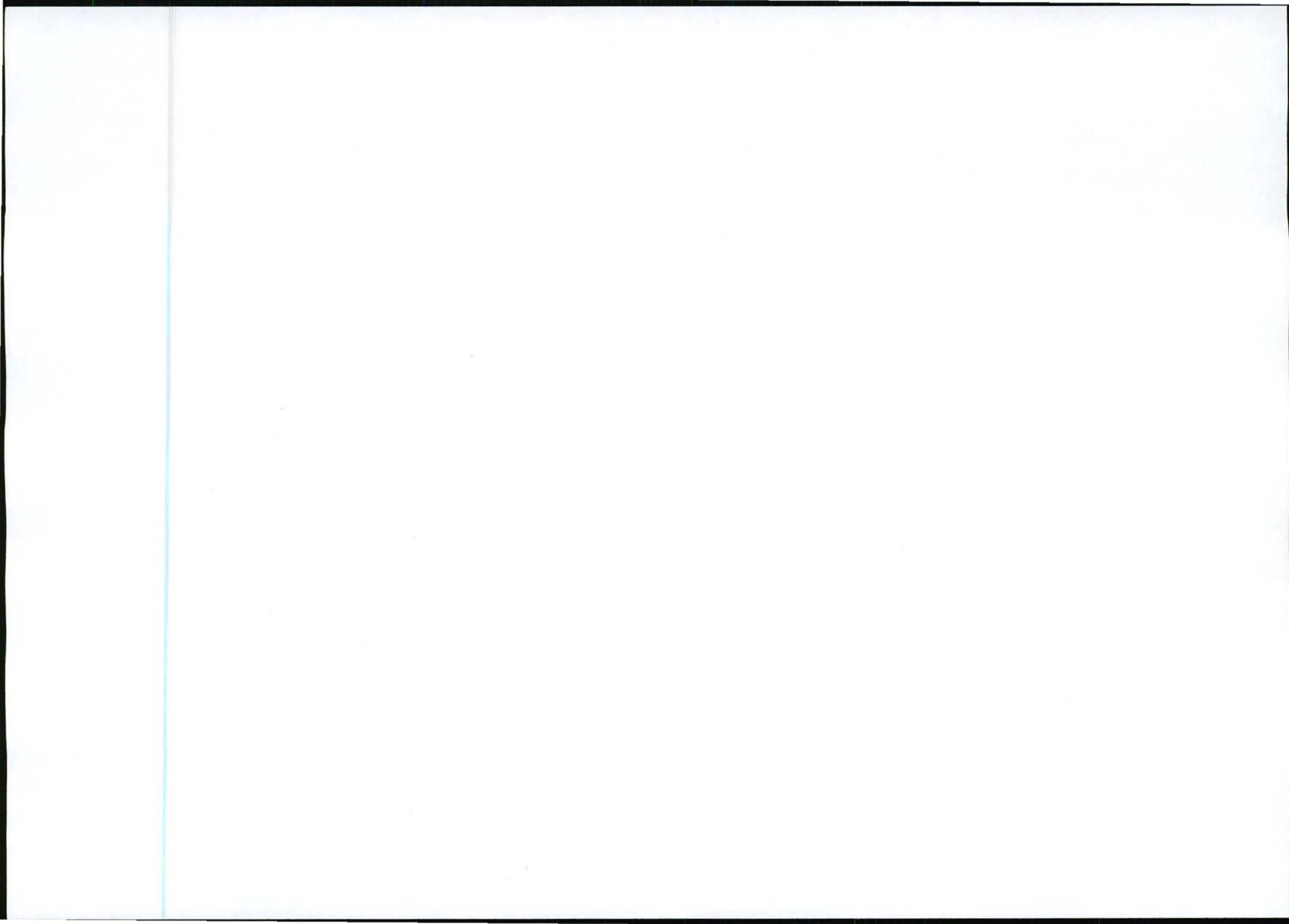
Plot number	106	107	108	109	110	111	112	113
Tasman Pacific site code	37	37	37	37	37	37	37	37
Farm	Groene Vallei (W)	Groene Vallei (W)	Groene Vallei (W)	Groene Vallei (E)	Groene Vallei (E)	Groene Vallei (E)	Groene Vallei (E)	Groene Vallei (E)
Date (year/month/day)	20090915	20090915	20090915	20090915	20090915	20090915	20090915	20090916
Relevé area (sq m)	25	25	25	25	25	25	25	25
Altitude (m)	1024	1031	1036	1088	1086	1084	1103	1104
Aspect (degrees)	NNW	NNW	NNW	N	NNE	NNE	NNE	N
Slope (degrees)	10	10	5	10	5	5	10	10
Geology	sast	sast	sast	sast	sast	sast	sast	sast
Soil texture	sa	sa	salm	sa	si	sisa	lm	lm
Soil colour	orbu	orbu	br	bubr	bubr	bubr	bubr	br
Drainage	good	good	good	good	good	good	good	good
Bedrock cover (%)	15	10	0	5	25	10	0	0
Stone cover (%)	60	80	70	85	60	70	90	90
Species richness	22	22	20	30	28	26	23	21
Vegetation cover total (%)	45	40	60	45	40	50	60	60
<u>Enneapogon scoparius</u>	4	5	20	0.2	0.2	5	0.2	40
<u>Eriocephalus ericoides</u>	0.2	1	0.1	2	6	.	20	0.1
<u>Stachys cuneata</u>	30	20	15	0.1	0.2	.	.	.
<u>Aristida diffusa</u>	.	.	20	30	25	30	30	1
<u>Pentzia incana</u>	.	.	0.2	0.2	1	8	5	10
<u>Tragus koelerioides</u>	0.2	4	0.2	0.2	0.2	0.2	0.2	0.1
<u>Felicia filifolia</u>	0.1	0.1	0.1	0.2	0.2	0.1	.	0.1
<u>Felicia muricata</u>	.	0.1	0.1	0.2	.	0.1	0.1	0.2
<u>Euphorbia tridentata</u>	.	0.2	.	0.2	0.2	0.1	0.2	0.2
<u>Heteropogon contortus</u>	0.2	0.2	4	5	0.1	.	0.2	.
<u>Digitaria eriantha</u>	0.2	.	.	0.2	0.2	0.2	0.2	0.1
<u>Chrysocoma ciliata</u>	.	.	.	0.2	1	0.2	0.2	0.2
<u>Trichodiadema setuliferum</u>	.	0.2	.	0.2	0.1	0.2	0.1	.
<u>Acacia karroo</u>	.	.	.	0.2	0.1	0.1	0.1	0.1
<u>Asparagus suaveolens</u>	.	.	1	0.1	0.2	1	0.1	.
<u>Eragrostis lehmanniana</u>	2	.	0.2	0.2	0.2	.	0.2	.



Plot number	106	107	108	109	110	111	112	113
Tasman Pacific site code	37	37	37	37	37	37	37	37
Farm	Groene Vallei (W)	Groene Vallei (W)	Groene Vallei (W)	Groene Vallei (E)	Groene Vallei (E)	Groene Vallei (E)	Groene Vallei (E)	Groene Vallei (E)
<i>Nenax microphylla</i>	0.2	0.2	0.2	.	.	0.1	0.2	.
<i>Lotononis</i> sp.	0.2	0.2	.	0.2	.	0.1	0.1	.
<i>Hermannia linearifolia</i>	.	.	.	0.1	0.1	.	0.1	0.2
<i>Searsia undulata</i>	.	.	.	0.1	0.1	0.1	.	0.1
<i>Indigofera sessilifolia</i>	0.2	0.1	2	.	0.2	0.2	.	.
<i>Selago albida</i>	.	.	.	0.2	0.1	.	.	0.2
<i>Sporobolus fimbriatus</i>	.	0.1	.	0.2	0.2	.	.	.
<i>Crassula capitella</i>	0.2	0.2	.	.	.	0.1	.	.
<i>Albuca</i> sp.	0.2	0.1	0.2	.	.	.	.	.
<i>Jamesbrittenia tysonii</i>	0.2	0.1	.	0.2	.	.	.	.
<i>Asparagus striatus</i>	.	.	.	.	0.2	.	.	1
<i>Jamesbrittenia tysonii</i>	.	.	.	.	.	.	0.1	0.2
<i>Pegolettia retrofracta</i>	.	.	.	.	0.2	.	.	0.1
<i>Opuntia ficus-indica</i>	.	.	.	.	.	0.1	0.1	.
<i>Moraea polystachya</i>	.	.	.	.	0.1	0.1	.	.
<i>Helichrysum trilineatum</i>	.	.	4	0.2	.	.	.	.
<i>Aptosimum procumbens</i>	.	.	.	0.1	0.2	.	.	.
<i>Searsia longispina</i>	.	.	.	0.1	.	0.1	.	.
<i>Helichrysum dregeanum</i>	0.2	0.1	.	.	.	.	.	.
<i>Senecio radicans</i>	0.2	0.2	.	.	.	.	.	.
<i>Sutherlandia frutescens</i>	0.1	0.1	.	.	.	.	.	.
<i>Cheilanthes hirta</i>	0.1	.	.	0.2	.	.	.	.
<i>Crassula muscosa</i>	.	0.1	.	.	.	.	.	.
<i>Eragrostis obtusa</i>	.	.	.	.	.	0.2	.	.
<i>Lycium cinereum</i>	.	.	.	.	0.1	.	.	.
<i>Pteronia glauca</i>	.	.	2	.	.	.	.	.
<i>Euphorbia caterviflora</i>	.	.	.	.	.	0.1	.	.
<i>Pentzia sphaerocephala</i>	.	.	0.2	.	.	.	.	.
<i>Cynodon dactylon</i>	.	.	.	.	.	.	.	0.1
<i>Hermannia coccocarpa</i>	.	.	.	.	.	.	.	0.2
<i>Monechma incanum</i>	.	.	.	.	.	.	.	0.2
<i>Solanum tomentosum</i>	.	.	.	.	.	.	.	0.1
<i>Blepharis mitrata</i>	.	.	.	.	.	.	0.1	.
<i>Hermannia cernua</i>	.	.	.	.	.	.	0.1	.
<i>Kyllinga alba</i>	.	.	.	.	.	.	0.2	.
<i>Rhigozum obovatum</i>	.	.	.	.	.	.	0.1	.
<i>Boophane disticha</i>	.	.	.	.	.	0.1	.	.
<i>Ehretia rigida</i>	.	.	.	.	.	0.1	.	.
<i>Microloma armatum</i> v. <i>armatum</i>	.	.	.	.	.	0.1	.	.
<i>Oropetium capense</i>	.	.	.	.	.	0.1	.	.
<i>Helichrysum zeyheri</i>	.	.	.	.	0.1	.	.	.
<i>Clutia</i> species	.	.	.	.	0.1	.	.	.
<i>Jamesbrittenia atropurpurea</i>	.	.	.	.	0.1	.	.	.
<i>Felicia ovata</i>	.	.	1	.	.	.	.	.
<i>Fingerhuthia africana</i>	.	.	0.1	.	.	.	.	.
<i>Heliophila</i> sp.	.	.	0.2	.	.	.	.	.



Plot number	106	107	108	109	110	111	112	113
Tasman Pacific site code	37	37	37	37	37	37	37	37
Farm	Groene Vallei (W)	Groene Vallei (W)	Groene Vallei (W)	Groene Vallei (E)	Groene Vallei (E)	Groene Vallei (E)	Groene Vallei (E)	Groene Vallei (E)
<i>Walafrida</i> sp.	.	0.2	.	.	.	.	.	.
<i>Eustachys paspaloides</i>	.	.	.	0.2	.	.	.	.
<i>Helichrysum rosum</i>	.	.	.	0.2	.	.	.	.
<i>Asparagus aethiopicus</i>	.	.	.	0.1	.	.	.	.
<i>Phymasperrum aciculare</i>	.	.	.	0.1	.	.	.	.
<i>Alectra sessiliflora</i>	0.2	.	.	.	.	.	.	.
<i>Crassula montana</i> s. <i>quadrangularis</i>	0.2	.	.	.	.	.	.	.
<i>Indigofera alternans</i>	0.2	.	.	.	.	.	.	.





#### **Appendix 4. List of bird species recorded for the quarter-degree squares 3225AB & BB (Cradock)**

The list was compiled by WRJ Dean from personal observations and museum records, and supplemented with records from the Southern African Bird Atlas Project (SABAP) [http://birds.sanbi.org/sabap/sabap\\_select1.php](http://birds.sanbi.org/sabap/sabap_select1.php) Species likely to occur, or seen at the proposed prospecting site are underlined.

Status: Red Data status (BirdLife International 2004) is in bold type in parentheses after the specific name. NT = Near Threatened, VU = Vulnerable. All other species are of "Least Concern". (Birdlife International 2004)

NEMBA status is the national protection status awarded to species in the appendices of the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004): publication of lists of critically endangered, endangered, vulnerable and protected species.

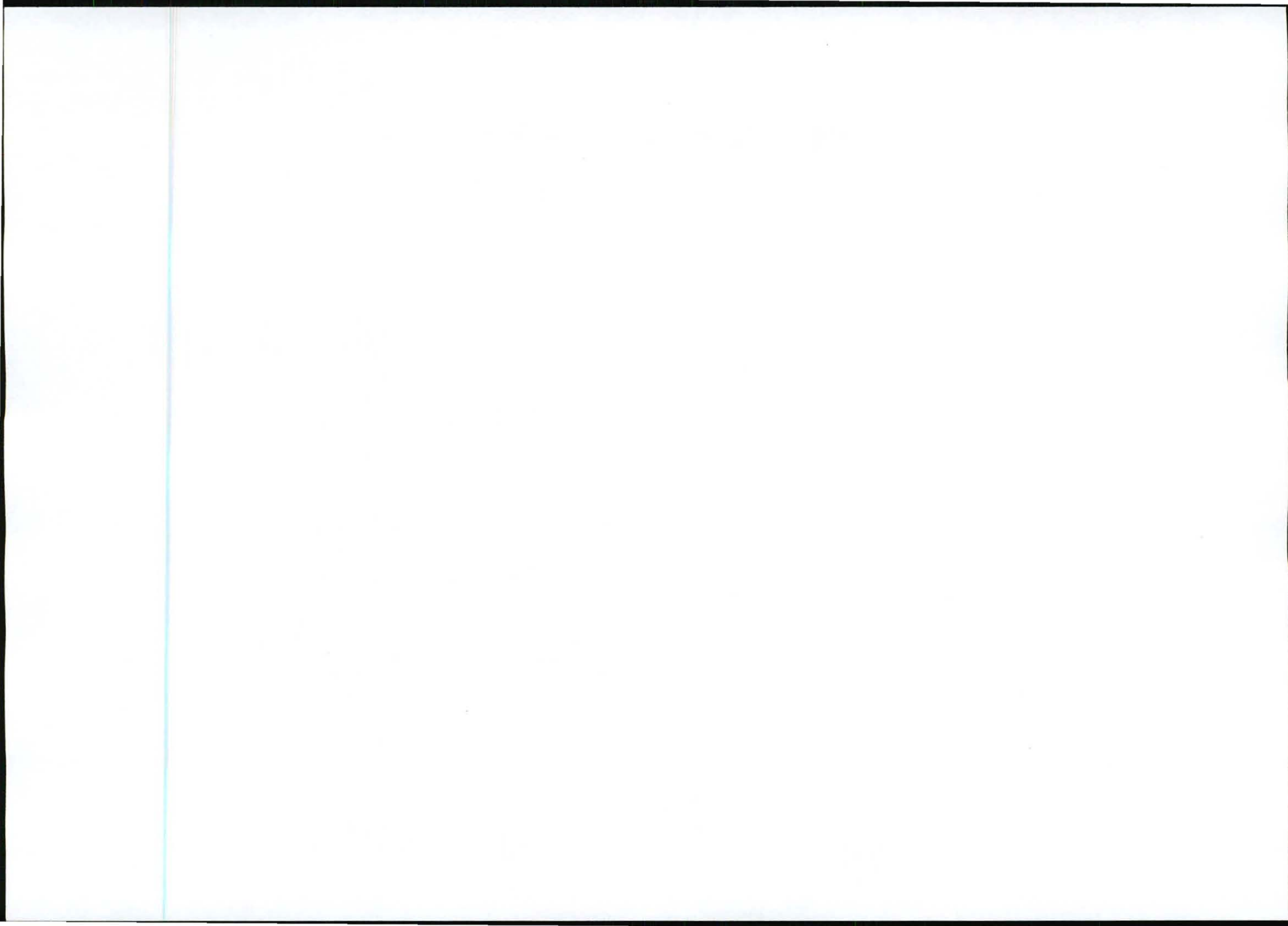
Alien invasive species are denotated with \*\*

Rob 7 = the number given in Roberts Birds ver 7 (Hockey, P.A.R., Dean, W.R.J. & Ryan, P.G. 2005. Roberts' Birds of southern Africa, 7th edition. John Voelcker Bird Book Fund, Cape Town)

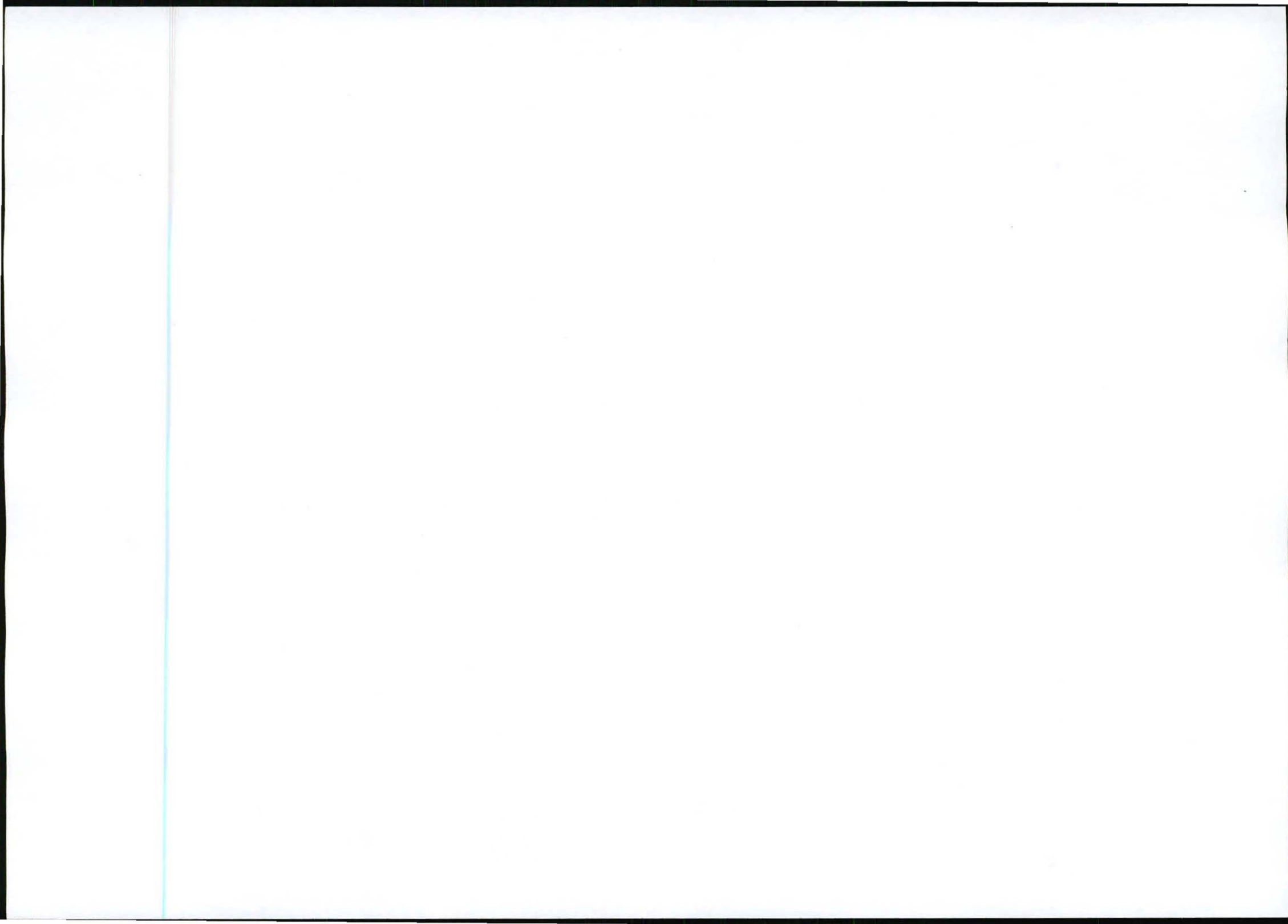
Rob 7	Common names	Scientific Name	SABAP	WRJD	Red data status	NEMBA status
1	Common Ostrich	<i>Struthio camelus</i>	x			
5	Grey-winged Francolin	<i>Scleroptila africanus</i>	x			
15	Common Quail	<i>Coturnix coturnix</i>	x			
20	Helmeted Guineafowl	<i>Numida meleagris</i>	x			
25	Egyptian Goose	<i>Alopochen aegyptiaca</i>	x			
26	South African Shelduck	<i>Tadorna cana</i>	x			
27	Spur-winged Goose	<i>Plectropterus gambensis</i>	x			
30	Cape Teal	<i>Anas capensis</i>	x			
31	African Black Duck	<i>Anas sparsa</i>	x			
33	Yellow-billed Duck	<i>Anas undulata</i>	x			
34	Cape Shoveler	<i>Anas smithii</i>	x			
36	Red-billed Teal	<i>Anas erythrorhyncha</i>	x			
45	Greater Honeyguide	<i>Indicator indicator</i>	x			
46	Lesser Honeyguide	<i>Indicator minor</i>	x			
57	Cardinal Woodpecker	<i>Dendropicos fuscescens</i>	x			
66	Red-fronted Tinkerbird	<i>Pogoniulus pusillus</i>	x			
67	Acacia Pied Barbet	<i>Tricholaema leucomelas</i>	x			

Cradock,  
Doomhoek

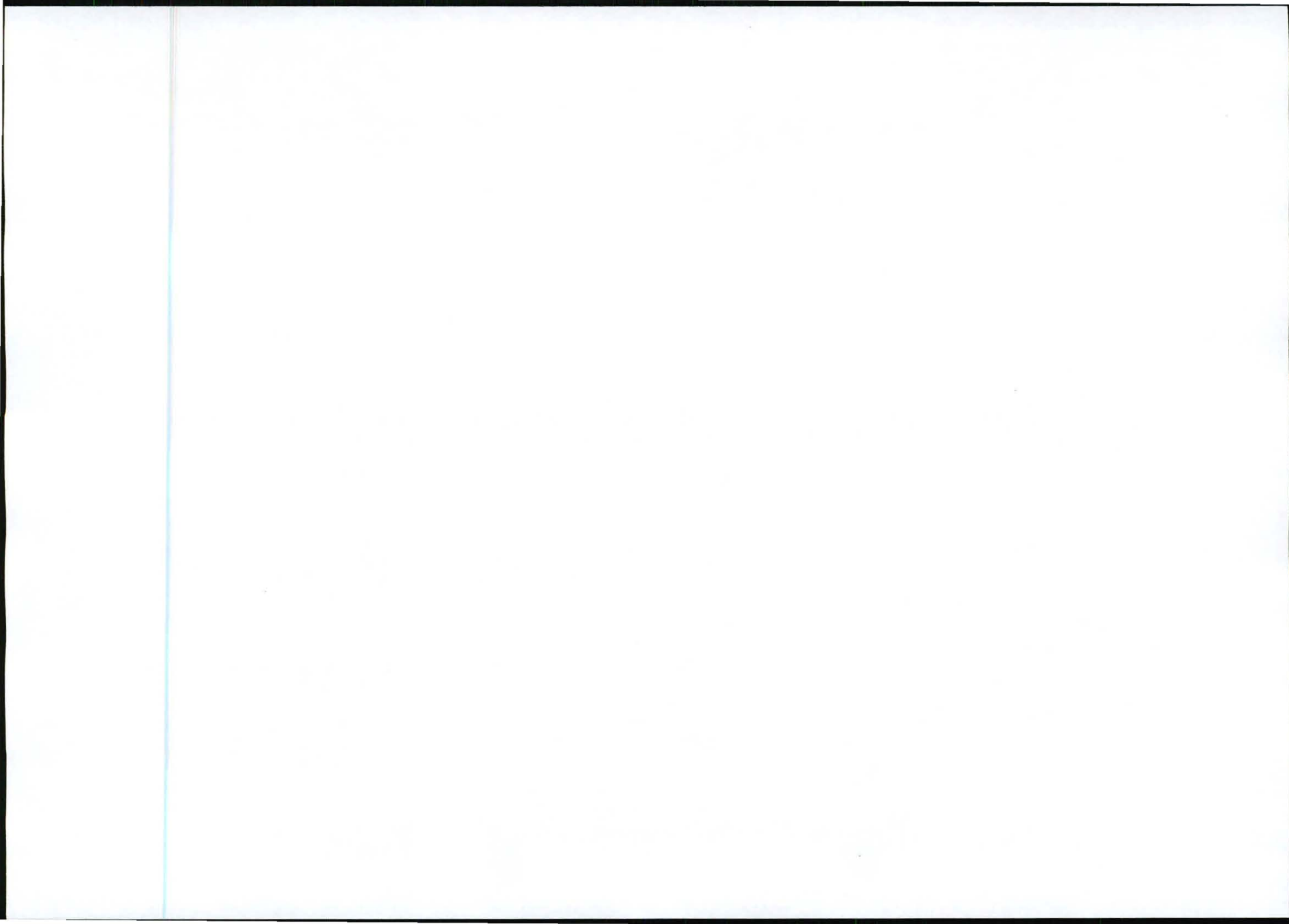
Post  
Chalmers;  
Cradock,  
Doomhoek



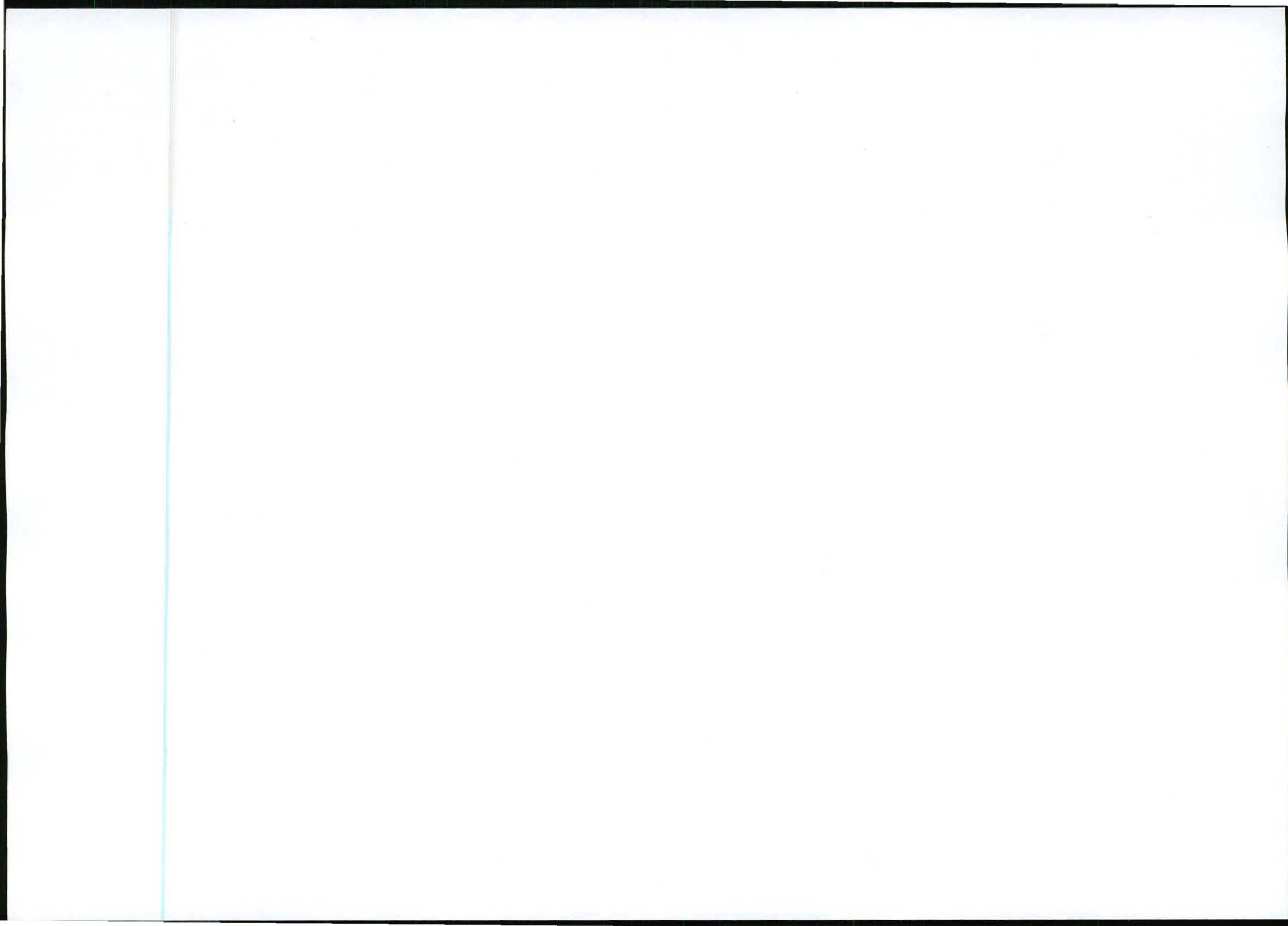
Rob 7	Common names	Scientific Name	SABAP	WRJD	Red data status	NEMBA status
	68 Black-collared Barbet	<i>Lybius torquatus</i>	x			
	80 African Hoopoe	<i>Upupa africana</i>	x			
	81 Green Wood-Hoopoe	<i>Phoeniculus purpureus</i>	x			
	91 Malachite Kingfisher	<i>Alcedo cristata</i>	x			
	96 Brown-hooded Kingfisher	<i>Halcyon albiventris</i>	x			
	98 Giant Kingfisher	<i>Megaceryle maximus</i>	x			
	99 Pied Kingfisher	<i>Ceryle rudis</i>	x			
	107 European Bee-eater	<i>Merops apiaster</i>	x			
	109 White-backed Mousebird	<i>Colius colius</i>	x		Cradock, Doomhoek	
	110 Speckled Mousebird	<i>Colius striatus</i>	x		Cradock, Doomhoek	
	111 Red-faced Mousebird	<i>Urocolius indicus</i>	x			
	114 Great Spotted Cuckoo	<i>Clamator glandarius</i>	x			
	116 Red-chested Cuckoo	<i>Cuculus solitarius</i>	x			
	125 Diderick Cuckoo	<i>Chrysococcyx caprius</i>	x			
	145 Alpine Swift	<i>Tachymarptis melba</i>	x			
	149 African Black Swift	<i>Apus barbatus</i>	x			
	151 Little Swift	<i>Apus affinis</i>	x			
	152 Horus Swift	<i>Apus horus</i>	x			
	153 White-rumped Swift	<i>Apus caffer</i>	x			
	164 Cape Eagle-Owl	<i>Bubo capensis</i>	x			
	165 Spotted Eagle-Owl	<i>Bubo africanus</i>	x			
	172 Fiery-necked Nightjar	<i>Caprimulgus pectoralis</i>	x			
	180 Speckled Pigeon	<i>Columba guinea</i>	x			
	185 Laughing Dove	<i>Streptopelia senegalensis</i>	x			
	187 Cape Turtle-Dove	<i>Streptopelia capicola</i>	x			
	188 Red-eyed Dove	<i>Streptopelia semitorquata</i>	x			
	Emerald-spotted Wood-					
	189 Dove	<i>Turtur chalcospilos</i>	x			
	192 Namaqua Dove	<i>Oena capensis</i>	x			
	194 Denham's Bustard	<i>Neotis denhami</i>	x		VU	P
	195 Ludwig's Bustard	<i>Neotis ludwigii</i>	x		VU	VU
	198 Southern Black Korhaan	<i>Afrotis afra</i>	x			
	201 Karoo Korhaan	<i>Eupodotis vigorsii</i>	x			
	206 Blue Crane	<i>Anthropoides paradiseus</i>	x		VU	EN
	224 Common Moorhen	<i>Gallinula chloropus</i>	x			
	226 Red-knobbed Coot	<i>Fulica cristata</i>	x			
	241 Common Greenshank	<i>Tringa nebularia</i>	x			
	272 Spotted Thick-knee	<i>Burhinus capensis</i>	x			
	282 Kittlitz's Plover	<i>Charadrius pecuarius</i>	x			
	283 Three-banded Plover	<i>Charadrius tricollaris</i>	x		Cradock, Doomhoek	
	291 Blacksmith Lapwing	<i>Vanellus armatus</i>	x			
	297 Crowned Lapwing	<i>Vanellus coronatus</i>	x			
	340 White-winged Tern	<i>Chlidonias leucopterus</i>	x			
	348 Black-shouldered Kite	<i>Elanus caeruleus</i>	x			
	350 African Fish-Eagle	<i>Haliaeetus vocifer</i>	x			
	357 Cape Vulture	<i>Gyps coprotheres</i>	x		VU	EN
	367 Black Harrier	<i>Circus maurus</i>	x		NT	



Rob 7	Common names	Scientific Name	SABAP	WRJD	Red data status	NEMBA status
370	African Harrier-Hawk Southern Pale Chanting	<i>Polyboroides typus</i>	x			
373	Goshawk	<i>Melierax canorus</i>	x			
374	Gabar Goshawk	<i>Melierax gabar</i>	x			
375	African Goshawk Rufous-chested	<i>Accipiter tachiro</i>	x			
379	Sparrowhawk	<i>Accipiter rufiventris</i>	x			
381	Steppe Buzzard	<i>Buteo vulpinus</i>	x			
385	Jackal Buzzard	<i>Buteo rufofuscus</i>	x			
387	Tawny Eagle	<i>Aquila rapax</i>	x		VU	
389	Verreaux's Eagle	<i>Aquila verreauxii</i>	x			
392	Booted Eagle	<i>Aquila pennatus</i>	x			
394	Martial Eagle	<i>Polemaetus bellicosus</i>	x		VU	VU
397	Secretarybird	<i>Sagittarius serpentarius</i>	x	Kareebosc h, Albany	NT	
399	Lesser Kestrel	<i>Falco naumanni</i>	x		VU	VU
400	Rock Kestrel	<i>Falco rupicolus</i>	x			
401	Greater Kestrel	<i>Falco rupicoloides</i>	x			
411	Lanner Falcon	<i>Falco biarmicus</i>	x		NT	
412	Peregrine Falcon	<i>Falco peregrinus</i>	x			
414	Little Grebe	<i>Tachybaptus ruficollis</i>	x			
424	African Darter	<i>Anhinga rufa</i>	x			
425	Reed Cormorant	<i>Phalacrocorax africanus</i>	x			
427	White-breasted Cormorant	<i>Phalacrocorax lucidus</i>	x			
438	Grey Heron	<i>Ardea cinerea</i>	x			
442	Cattle Egret Black-crowned Night-	<i>Bubulcus ibis</i>	x			
447	Heron	<i>Nycticorax nycticorax</i>	x			
452	Hamerkop	<i>Scopus umbretta</i>	x			
456	Hadeda Ibis	<i>Bostrychia hagedash</i>	x			
458	African Sacred Ibis	<i>Threskiomis aethiopicus</i>	x			
459	African Spoonbill	<i>Platalea alba</i>	x			
464	Black Stork	<i>Ciconia nigra</i>	x		NT	V
467	White Stork	<i>Ciconia ciconia</i>	x			
537	Black-headed Oriole	<i>Oriolus larvatus</i>	x			
539	Fork-tailed Drongo African Paradise-	<i>Dicrurus adsimilis</i>	x			
541	Flycatcher	<i>Terpsiphone viridis</i>	x			
547	Southern Tchagra	<i>Tchagra tchagra</i>	x			
550	Southern Boubou	<i>Laniarius ferrugineus</i>	x			
552	Bokmakierie	<i>Telophorus zeylonus</i>	x			
554	Olive Bush-Shrike	<i>Telophorus olivaceus</i>	x			
563	Cape Batis	<i>Batis capensis</i>	x			
565	Chin-spot Batis	<i>Batis molitor</i>	x	Cradock, Doomhoek		
567	Print Batis	<i>Batis pririt</i>	x			
570	Cape Crow	<i>Corvus capensis</i>	x			
571	Pied Crow	<i>Corvus albus</i>	x			
572	White-necked Raven	<i>Corvus albicollis</i>	x			
573	Red-backed Shrike	<i>Lanius collurio</i>	x			

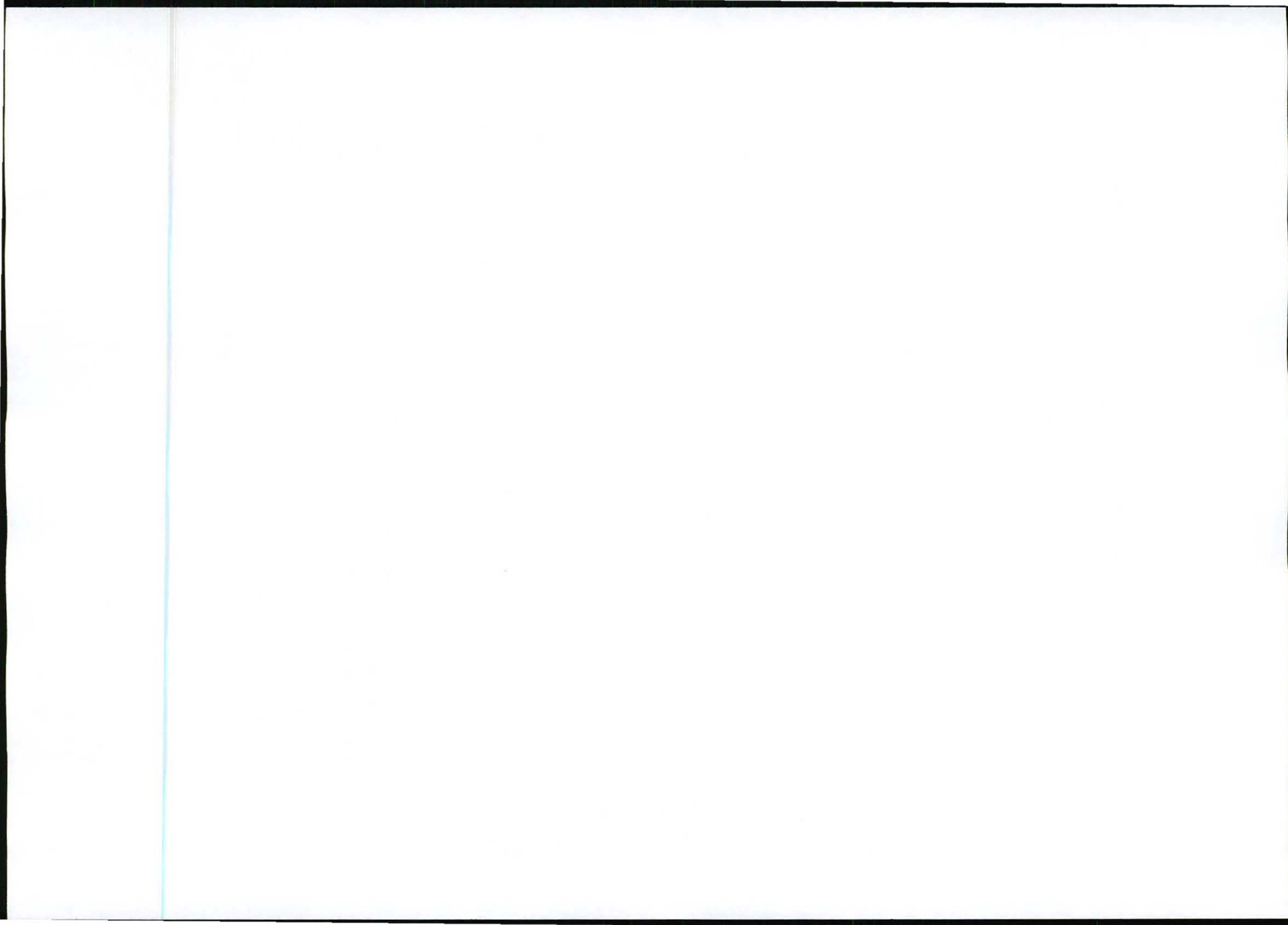


Rob 7	Common names	Scientific Name	SABAP	WRJD	Red data status	NEMBA status
				Cradock, Doomhoek		
	576 Common Fiscal	<i>Lanius collaris</i>	x			
	584 Cape Penduline-Tit	<i>Anthoscopus minutus</i>	x			
	592 Grey Tit	<i>Parus afer</i>	x			
	594 Brown-throated Martin	<i>Riparia paludicola</i>	x			
	598 Barn Swallow	<i>Hirundo rustica</i>	x			
	600 White-throated Swallow	<i>Hirundo albigularis</i>	x			
	603 Pearl-breasted Swallow	<i>Hirundo dimidiata</i>	x			
	604 Greater Striped Swallow	<i>Hirundo cucullata</i>	x			
	605 Lesser Striped Swallow	<i>Hirundo abyssinica</i>	x			
	610 Rock Martin	<i>Hirundo fuligula</i>	x			
	611 Common House-Martin	<i>Delichon urbicum</i>	x			
	615 Dark-capped Bulbul	<i>Pycnonotus tricolor</i>	x			
	616 African Red-eyed Bulbul	<i>Pycnonotus nigricans</i>	x			
	618 Sombre Greenbul	<i>Andropadus importunus</i>	x			
	626 Fairy Flycatcher	<i>Stenostira scita</i>	x			
				Cradock, Doomhoek		
	634 Long-billed Crombec	<i>Sylvietta rufescens</i>	x			
	635 Yellow-bellied Eremomela	<i>Eremomela icteropygialis</i>	x			
	637 Karoo Eremomela	<i>Eremomela gregalis</i>	x			
	656 Willow Warbler	<i>Phylloscopus trochilus</i>	x			
	665 Layard's Tit-Babbler	<i>Parisoma layardi</i>	x			
				Post Chalmers; Cradock, Doomhoek		
	Chestnut-vented Tit- 666 Babbler	<i>Parisoma subcaeruleum</i>	x			
	671 Cape White-eye	<i>Zosterops capensis</i>	x			
	678 Grey-backed Cisticola	<i>Cisticola subruficapilla</i>	x			
	683 Levaillant's Cisticola	<i>Cisticola tinniens</i>	x			
	685 Neddicky	<i>Cisticola fulvicapilla</i>	x			
	688 Desert Cisticola	<i>Cisticola aridulus</i>	x			
	689 Cloud Cisticola	<i>Cisticola textrix</i>	x			
				Post Chalmers		
	694 Karoo Prinia	<i>Prinia maculosa</i>	x			
	696 Namaqua Warbler	<i>Phragmacia substriata</i>	x			
	699 Rufous-eared Warbler	<i>Malcorus pectoralis</i>	x			
	700 Bar-throated Apalis	<i>Apalis thoracica</i>	x			
	711 Melodious Lark	<i>Mirafra cheniana</i>	x		NT	
	714 Cape Clapper Lark	<i>Mirafra apiata</i>	x			
	717 Sabota Lark	<i>Calendulauda sabota</i>	x			
	725 Spike-heeled Lark	<i>Chersomanes albofasciata</i>	x			
	734 Grey-backed Sparrowlark	<i>Eremopterix verticalis</i>	x			
	735 Red-capped Lark	<i>Calandrella cinerea</i>	x			
	740 Large-billed Lark	<i>Galerida magnirostris</i>	x			
	742 Cape Rock-Thrush	<i>Monticola rupestris</i>	x			
				Cradock, Doomhoek		
	751 Karoo Thrush	<i>Turdus smithi</i>	x			
	754 Chat Flycatcher	<i>Bradornis infuscatus</i>	x			
	757 Fiscal Flycatcher	<i>Sigelus silens</i>	x			
	758 Spotted Flycatcher	<i>Muscicapa striata</i>	x			
	759 African Dusky Flycatcher	<i>Muscicapa adusta</i>	x			

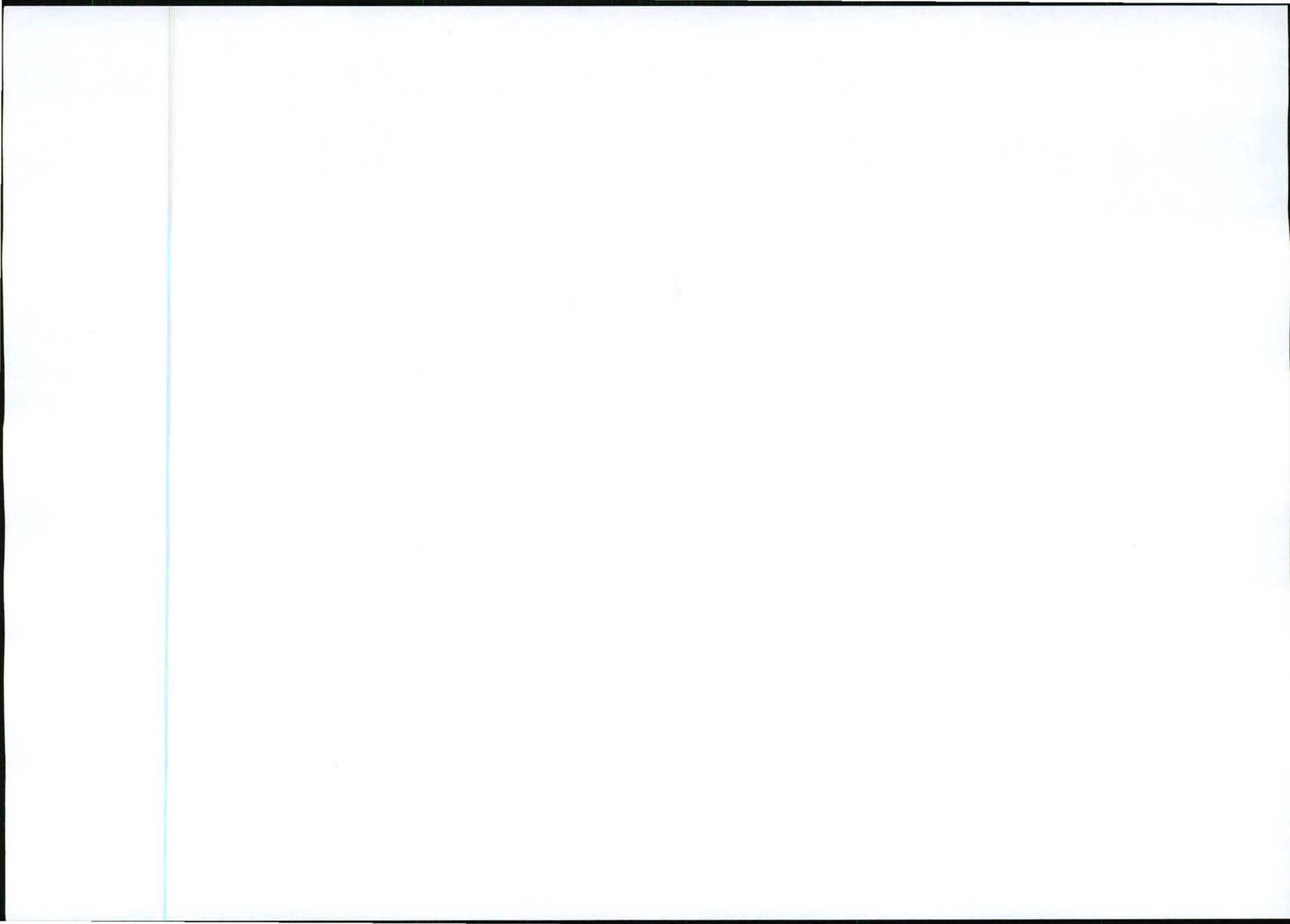




Rob 7	Common names	Scientific Name	SABAP	WRJD	Red data status	NEMBA status
				Cradock, Doomhoek		
767	Cape Robin-Chat	<i>Cossypha caffra</i>	x			
778	Karoo Scrub-Robin	<i>Cercotrichas coryphoeus</i>	x			
782	African Stonechat	<i>Saxicola torquatus</i>	x			
783	Buff-streaked Chat	<i>Oenanthe bifasciata</i>	x			
784	Mountain Wheatear	<i>Oenanthe monticola</i>	x			
789	Sickle-winged Chat	<i>Cercomela sinuata</i>	x			
790	Karoo Chat	<i>Cercomela schlegelii</i>	x			
792	Familiar Chat	<i>Cercomela familiaris</i>	x			
793	Anteating Chat	<i>Myrmecocichla formicivora</i>	x			
		<i>Thamnolaea</i>				
795	Mocking Cliff-Chat	<i>cinnamomeiventris</i>	x			
797	Pale-winged Starling	<i>Onychognathus nabouroup</i>	x			
798	Red-winged Starling	<i>Onychognathus morio</i>	x			
800	Cape Glossy Starling	<i>Lamprotornis nitens</i>	x			
808	Wattled Starling	<i>Creatophora cinerea</i>	x			
818	Amethyst Sunbird	<i>Chalcomitra amethystina</i>	x			
821	Malachite Sunbird	<i>Nectarinia famosa</i>	x			
	Southern Double-collared					
824	Sunbird	<i>Cinnyris chalybeus</i>	x			
	Greater Double-collared					
825	Sunbird	<i>Cinnyris afer</i>	x			
830	Dusky Sunbird	<i>Cinnyris fuscus</i>	x			
837	Scaly-feathered Finch	<i>Sporopipes squamifrons</i>	x			
	White-browed Sparrow-					
838	Weaver	<i>Plocepasser mahali</i>	x			
842	Cape Weaver	<i>Ploceus capensis</i>	x			
				Cradock, Doomhoek		
843	Southern Masked Weaver	<i>Ploceus velatus</i>				
854	Red-billed Quelea	<i>Quelea quelea</i>	x			
855	Yellow-crowned Bishop	<i>Euplectes afer</i>	x			
857	Southern Red Bishop	<i>Euplectes orix</i>	x			
867	African Quailfinch	<i>Ortygospiza atricollis</i>	x			
868	Red-headed Finch	<i>Amadina erythrocephala</i>	x			
871	Swee Waxbill	<i>Coccyzygia melanotis</i>	x			
876	Cinderella Waxbill	<i>Estrilda thomensis</i>	x			
877	Common Waxbill	<i>Estrilda astrild</i>	x			
885	Red-billed Firefinch	<i>Lagonosticta senegala</i>	x			
887	African Firefinch	<i>Lagonosticta rubricata</i>	x			
892	Pin-tailed Whydah	<i>Vidua macroura</i>	x			
901	House Sparrow	<i>Passer domesticus</i>	x			
				Post Chalmers		
903	Cape Sparrow	<i>Passer melanurus</i>	x			
	Southern Grey-headed					
904	Sparrow	<i>Passer diffusus</i>	x			
906	Yellow-throated Petronia	<i>Petronia supercilialis</i>	x			
				Post Chalmers; Cradock, Doomhoek		
908	Cape Wagtail	<i>Motacilla capensis</i>	x			
915	Cape Longclaw	<i>Macronyx capensis</i>	x			
919	African Rock Pipit	<i>Anthus crenatus</i>	x			



Rob 7	Common names	Scientific Name	SABAP	WRJD	Red data status	NEMBA status
				Cradock, Doomhoek		
	920 African Pipit	<i>Anthus cinnamomeus</i>	x			
	922 Plain-backed Pipit	<i>Anthus leucophrys</i>	x			
	925 Long-billed Pipit	<i>Anthus similis</i>	x			
	933 Cape Canary	<i>Serinus canicollis</i>	x			
	934 Black-headed Canary	<i>Serinus alario</i>	x			
	935 Yellow-fronted Canary	<i>Crithagra mozambicus</i>	x			
	936 Black-throated Canary	<i>Crithagra atrogularis</i>	x			
	939 Yellow Canary	<i>Crithagra flaviventris</i>	x			
	940 Brimstone Canary	<i>Crithagra sulphuratus</i>	x			
	941 White-throated Canary	<i>Crithagra albogularis</i>	x			
				Post Chalmers		
	943 Streaky-headed Seedeater	<i>Crithagra gularis</i>	x			
	947 Lark-like Bunting	<i>Emberiza impetuani</i>	x			
				Post Chalmers		
	949 Cape Bunting	<i>Emberiza capensis</i>	x			
	950 Golden-breasted Bunting	<i>Emberiza flaviventris</i>	x			



**Appendix 5. List of reptile, amphibian and dragonfly species recorded for the quarter-degree square 3225AB & BB (Cradock)**

The list was compiled by reference to The Virtual Museum @ ADU, Branch 1988a,b, Swingland & Klemens 1989, Marais 2004, Tarboton & Tarboton 2002, 2005, Tolley & Burger 2007, Uys 2002. Species likely to occur, or seen at the proposed prospecting site are underlined.

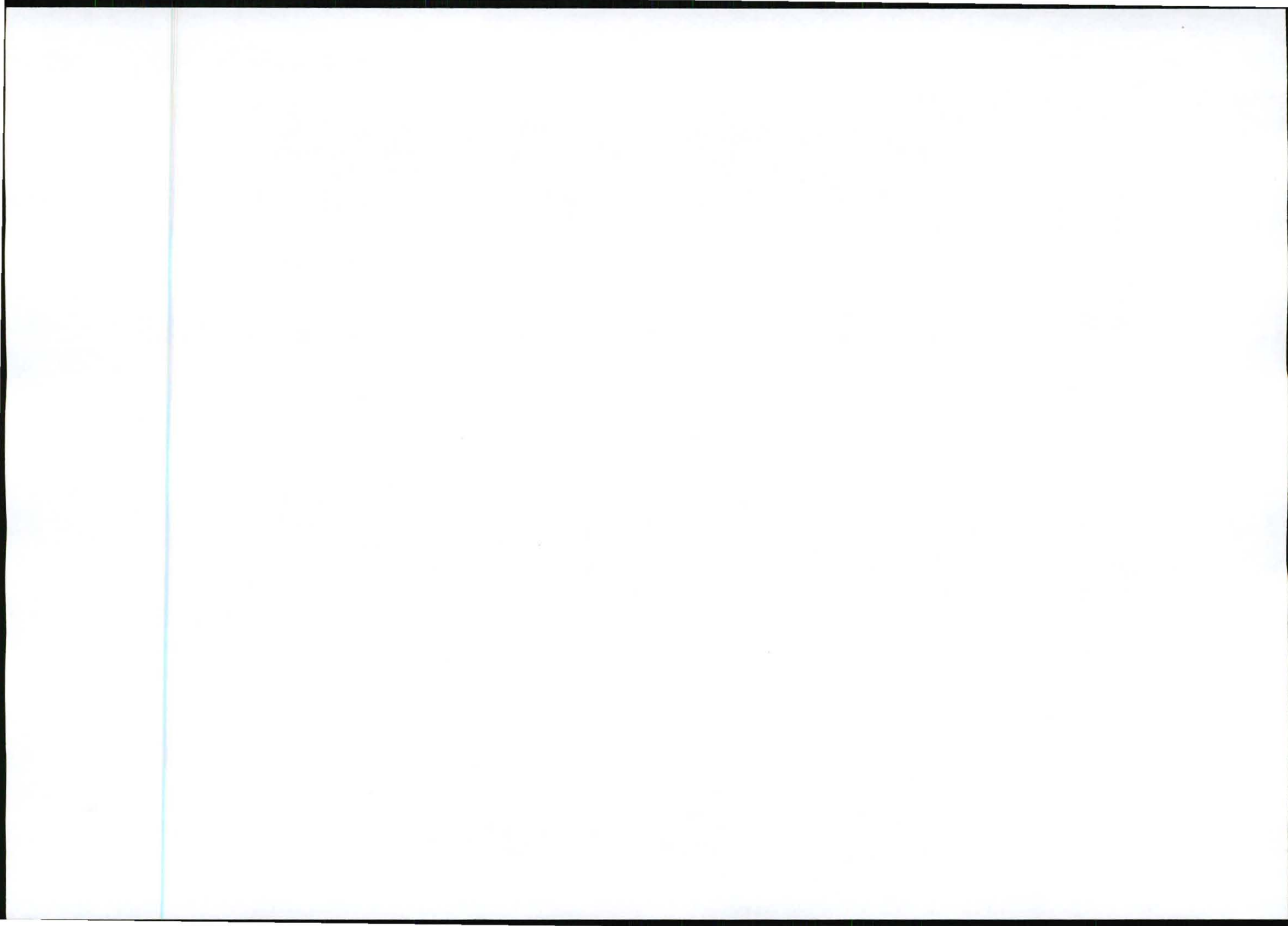
NEMBA status is the national protection status awarded to species in the appendices of the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004): publication of lists of critically endangered, endangered, vulnerable and protected species.

En = endangered, VU = Vulnerable, P = protected nationally.

Protection by provincial ordinances is specified as (P)

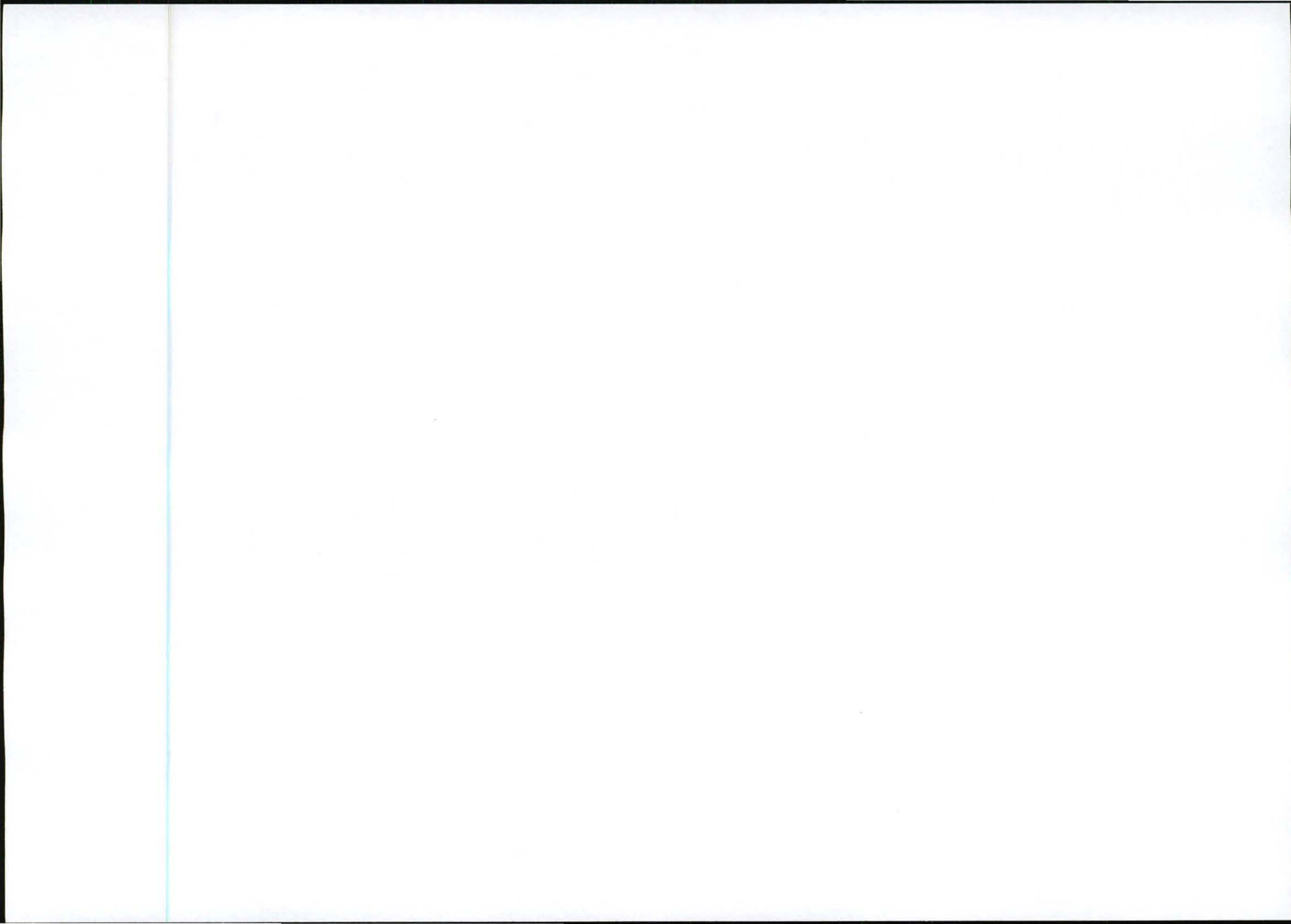
Group	Species
<b>Tortoises</b>	<u>Chersina angulata</u> (P)
	<u>Stigmochelys pardalis</u> ( <u>Geochelone</u> ) (P)
	<u>Homopus areolatus</u> (P)
	<u>Homopus femoralis</u> (P)
<b>Terrapins</b>	<u>Pelomedusa subrufa</u> (P)
<b>Snakes</b>	<u>Bitis arietans</u>
	<u>Bitis inornata</u>
	<u>Bitis caudalis</u>
	<u>Naja nivea</u>
	<u>Hemachatus haemachatus</u>
	<u>Aspidelaps lubricus</u>
	<u>Dispholidus typus</u>
	<u>Psammophis nostosticus</u>
	<u>Psammophis crucifer</u>
	<u>Psammophylax rhombeatus</u>
	<u>Amolorhinus multimaculatus</u>
	<u>Crotaphopeltis hotamboeia</u>
	<u>Lamprophis capensis</u> (P)

Group	Species
	<u>Lamprophis guttatus</u> (P)
	<u>Pseudaspis cana</u> (P)
	<u>Prosymna sundevalli</u> (P)
	<u>Lycophidion capense</u> (P)
	<u>Dasypeltis scabra</u> (P)
	<u>Rhinotyphlops lalandei</u>
<b>Skinks</b>	<u>Mabuya homalocephala</u> (P)
	<u>Mabuya occidentalis</u> (P)
	<u>Mabuya sulcata</u> (P)
	<u>Mabuya variegata</u> (P)
<b>Lizards</b>	<u>Pedioplanis namaquensis</u> (P)
	<u>Pedioplanis lineocellata</u> (P)
	<u>Pedioplanis burchelli</u> (P)
	<u>Cordylus polyzonus</u> (P)
	<u>Cordylus cordylus</u> (P)
	<u>Pseudocordylus microlepidatus</u> (P)
	<u>Varanus exanthematicus</u> (P)



Group	Species
	<i>Agama aculeata</i> (P)
	<i>Agama atra</i> (P)
<b>Chamaeleon</b>	<i>Bradypodion ventrale</i> (P)
<b>Geckos</b>	<i>Afroedura karroica</i> (P)
	<i>Pachydactylus bibronii</i> (P)
	<i>Pachydactylus capensis</i> (P)
	<i>Pachydactylus geitjje</i> (P)
	<i>Pachydactylus maculatus</i> (P)
	<i>Pachydactylus mariquensis</i> (P)
	<i>Ptenopus garrulus</i> (P)
<b>Frogs</b>	<i>Bufo garipeensis</i> (P)
	<i>Bufo vertebralis</i> (P)
	<i>Kassina senegalensis</i> (P)
	<i>Cacosternum boettgeri</i> (P)
	<i>Xenopus loevis</i> (P)
	<i>Afrana fuscigula</i> (P)
	<i>Tomopterna tandyi</i> (P)
<b>Termites</b>	<i>Hodotermes mossambicus</i>
	<i>Trinervitermes</i> sp.
	<i>Fulleritermes</i> sp.
<b>Dragon-flies</b>	<i>Grenigomphus hartmanni</i>
	<i>Paragomphus cognatus</i>
	<i>Certogomphus pictus</i>
	<i>Certogomphus triceratus</i>
	<i>Anax imperator</i>
	<i>Phyllomacromia picta</i>
	<i>Orthetrum caffrum</i>
	<i>Orthetrum chrysostigma</i>
	<i>Crocothemis erythraea</i>
	<i>Crocothemis sanguinolenta</i>
	<i>Trithemis kirbyi</i> (P)

Group	Species
	<i>Sympetrum fonscolombii</i> (P)
	<i>Trithemis arteriosa</i> (P)
	<i>Trithemis dorsalis</i> (P)
	<i>Trithemis furva</i> (P)
	<i>Pantala flavescens</i> (P)
<b>Damsel-flies</b>	<i>Chlorolestes fasciatus</i>
	<i>Allocnemis leucosticta</i>
	<i>Pseudagrion salisburyense</i>
	<i>Pseudagrion massaicum</i>
	<i>Ischnura senegalensis</i>
	<i>Africallagma glaucum</i>





## **Appendix 6. List of electronic appendices**

### ***DATA***

- TP37botanical-waypts.xls waypoints for botanical surveys presented in this study
- Birds3225(ABBB).xls Synthesised list of birds for 3225AB and 3225BB
- Plants3225(ABBB).xls Synthesised list of plants for 3225AB and 3225BB
- Herps3225(ABBB).xls Synthesised list of reptiles, amphibians and dragon flies for 3225AB and 3225BB
- Vegplots-TP37.xls Plant species and cover and environmental data for botanical survey plots on Denmark and Groene Vallei

### ***PHOTOGRAPHS***

- TP37-100-2009.09.15 to TP37-113-2009.09.15
- TP37-GroenV-landscape
- TP37 Denmark-access
- TP37-Nelskop1 to TP37-Nelskop3

### ***MAPS***

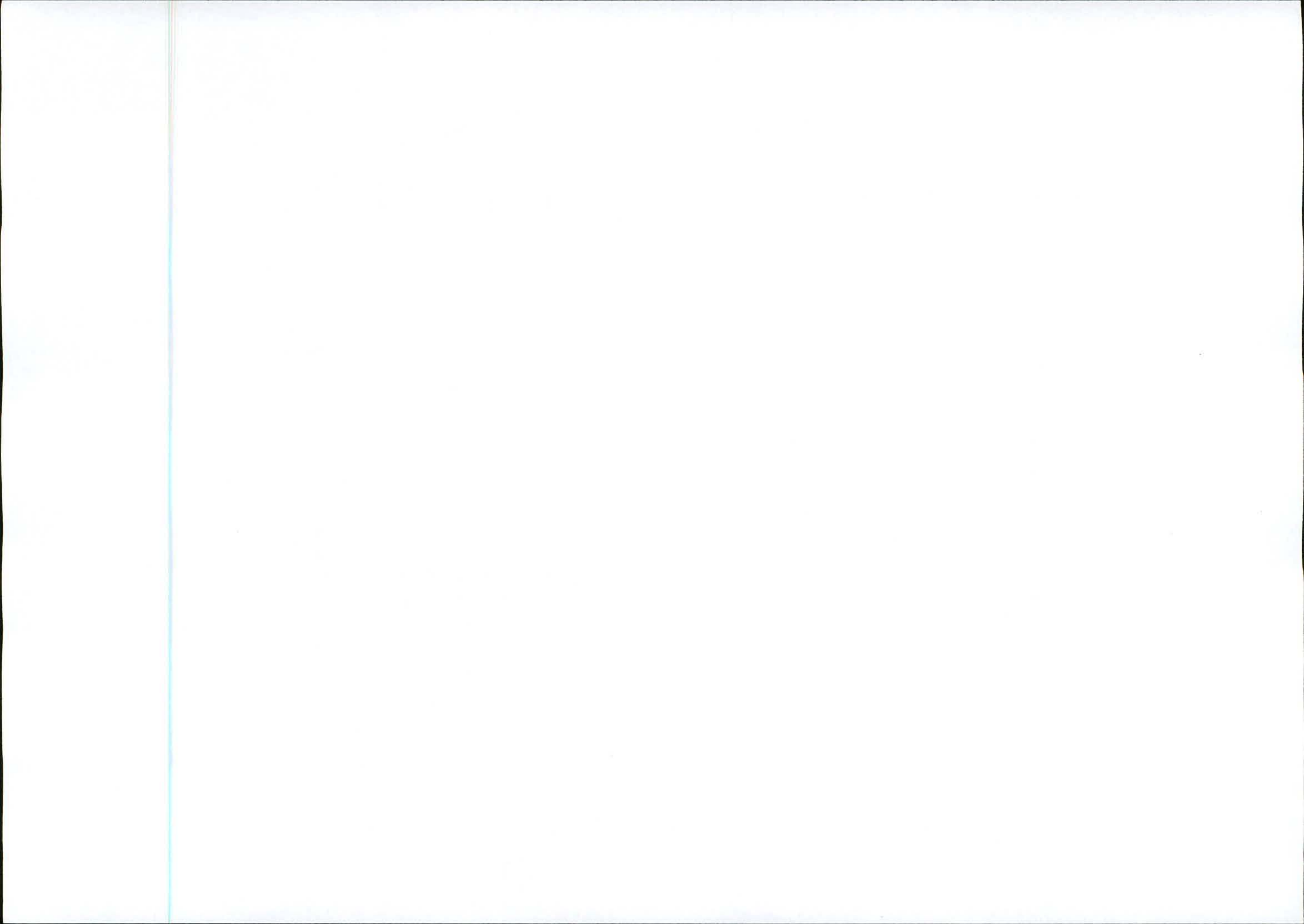
- Drill37-farm-topo.jpg GIS generated map showing proposed Drill Grids on Denmark and Groene Vallei in relation to farm boundaries, topography and drainage
- GroeneV-access.jpg GIS generated map showing proposed access road to Groene Vallei Drill Grid sites
- Prospect37-on-veg.jpg GIS generated map showing TP37 Prospecting Right superimposed on the vegetation map for Aouth Africa.

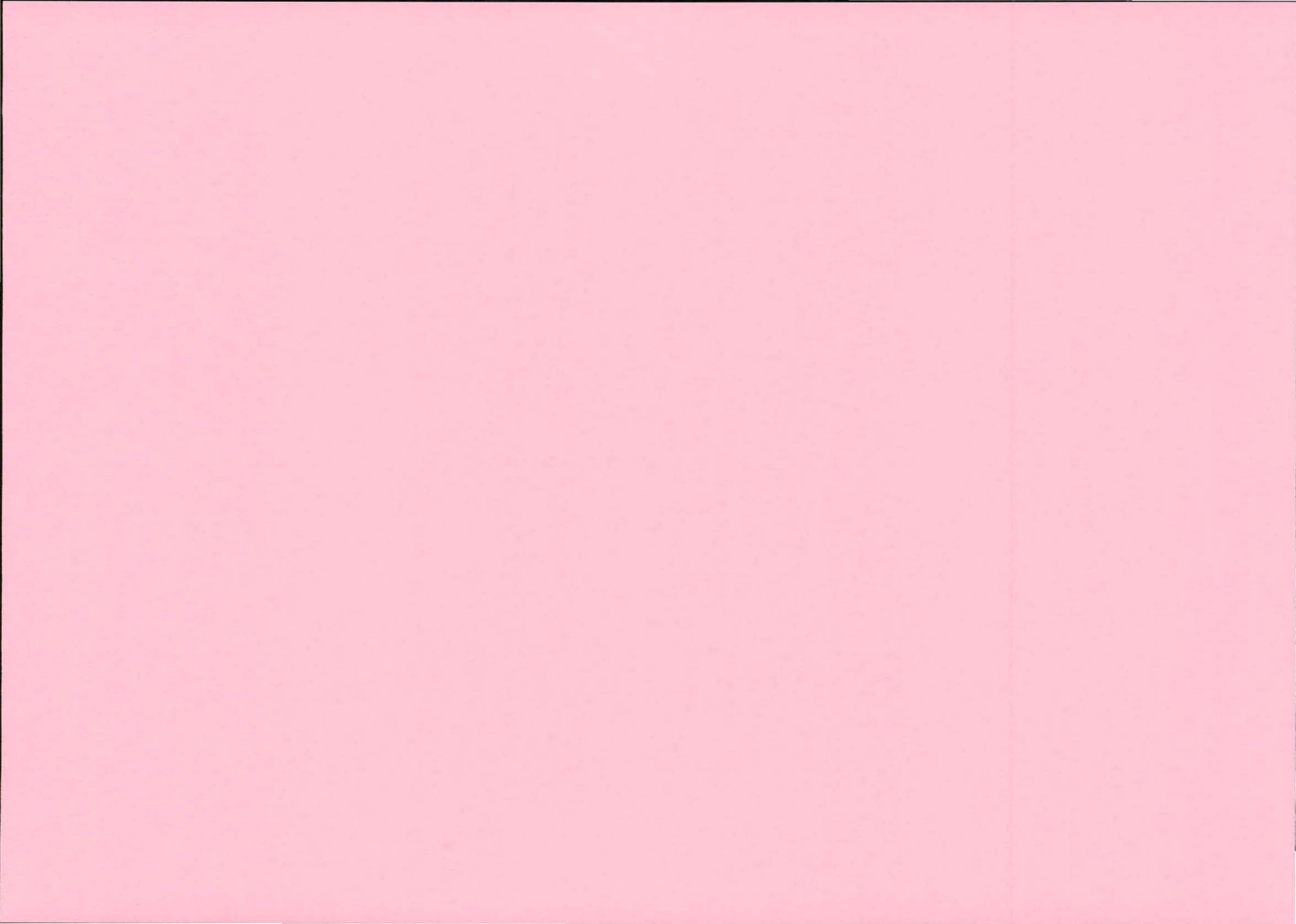
### ***SHAPEFILES***

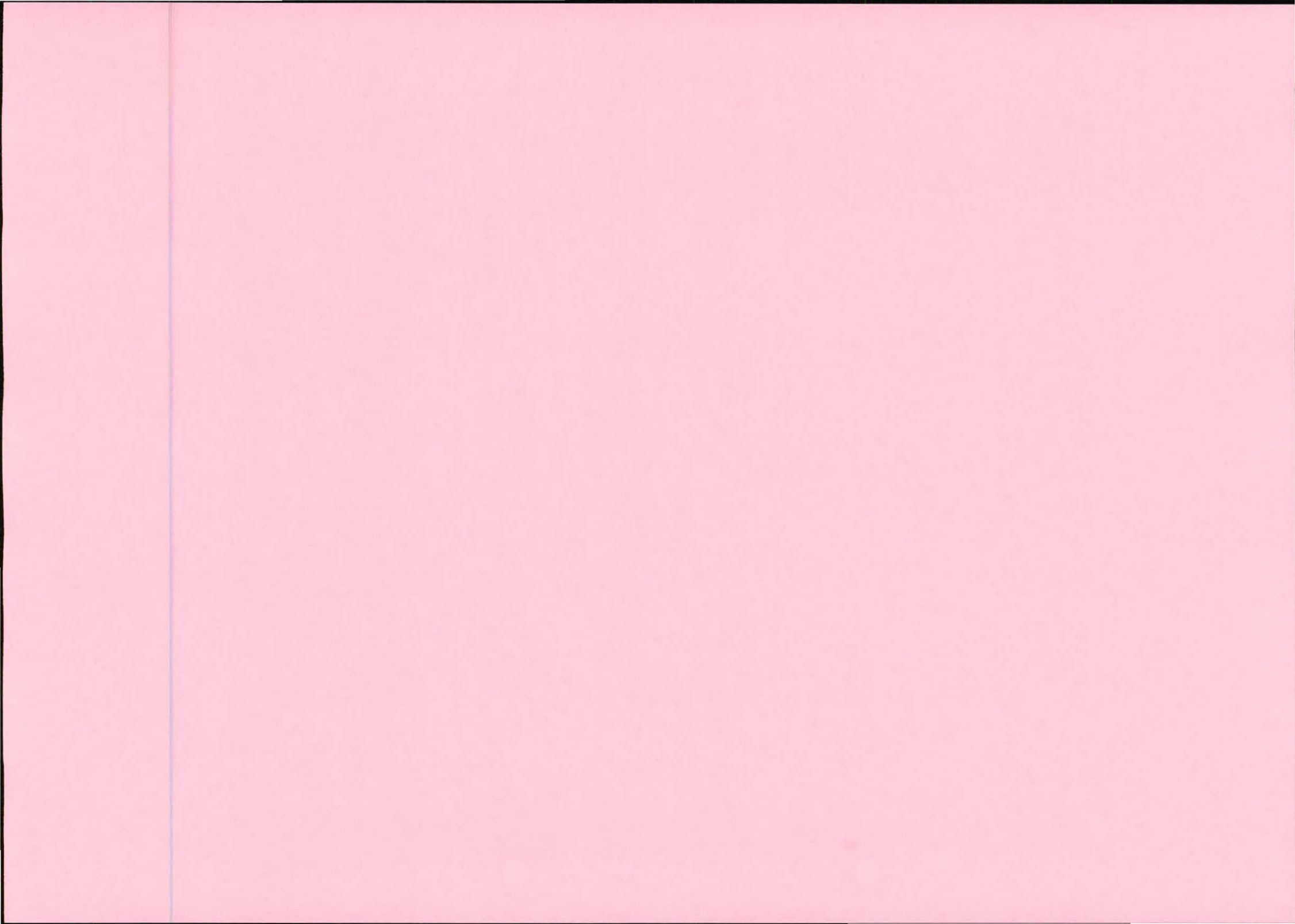
- Shapes for Drill Grids as supplied by Barry Millstead
- Supporting files including 3225AB, 3225BB from Surveys and Mapping, Mowbray, and slected files from the Mucina & Rutherford (2006)

### ***REPORT***

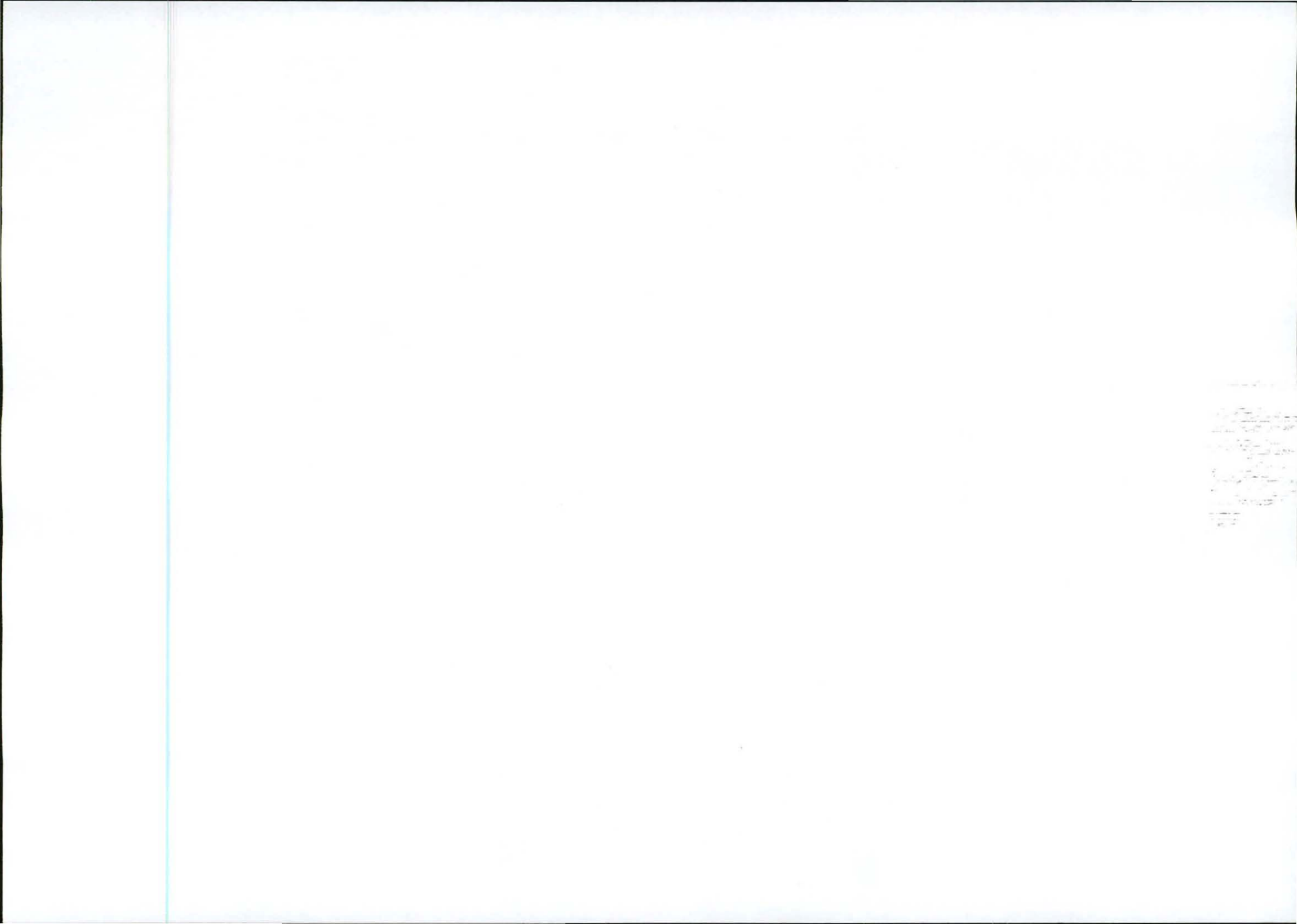
- Flora-fauna TP37.pdf in pdf 6 format
- Flora-fauna TP37.doc in MS Word format

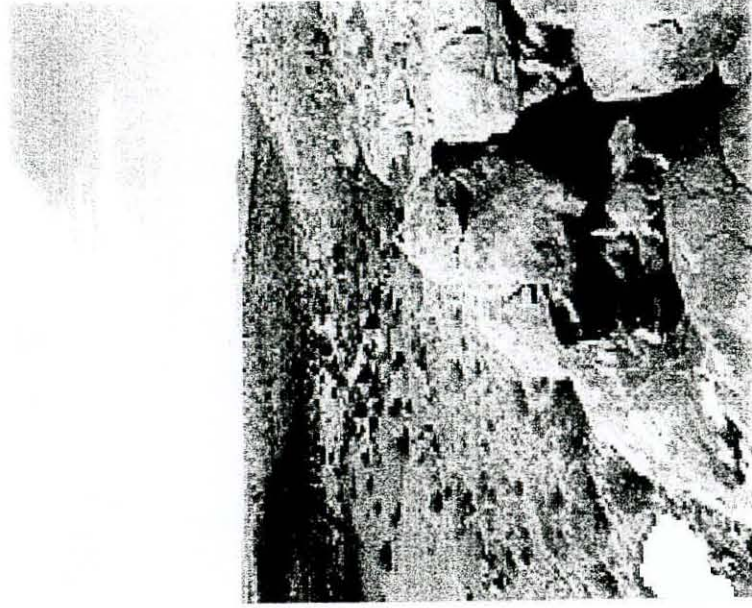






APPENDIX 5



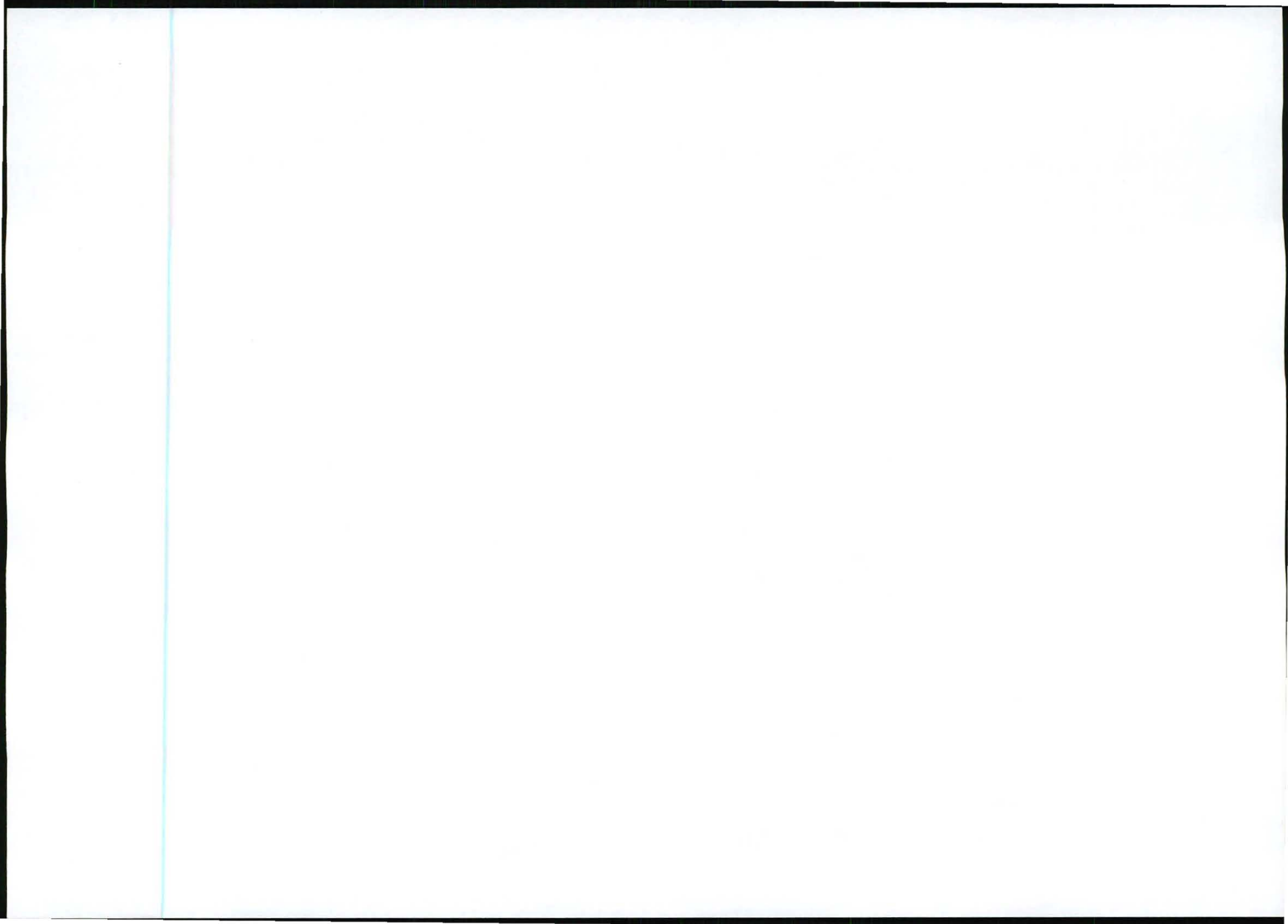


# TASMAN PACIFIC

# MINERALS LIMITED

PROSPECTING RIGHT ON RIVER  
GREEN 221 (REMAINING) AND  
VARIOUS OTHER FARMS IN THE  
DISTRICT OF CRADDOCK







1  
File number: (EC) 30/5/1/1/2/28PR

DEPARTMENT OF MINERALS AND ENERGY

ENVIRONMENTAL MANAGEMENT PLAN

Submitted in support of application for a prospecting right or mining permit.  
Section 39 and Regulation 52 of the Minerals and Petroleum Resources Development Act, 2002  
(Act 28 of 2002)



Application for a:

Prospecting Right	X
Mining Permit	

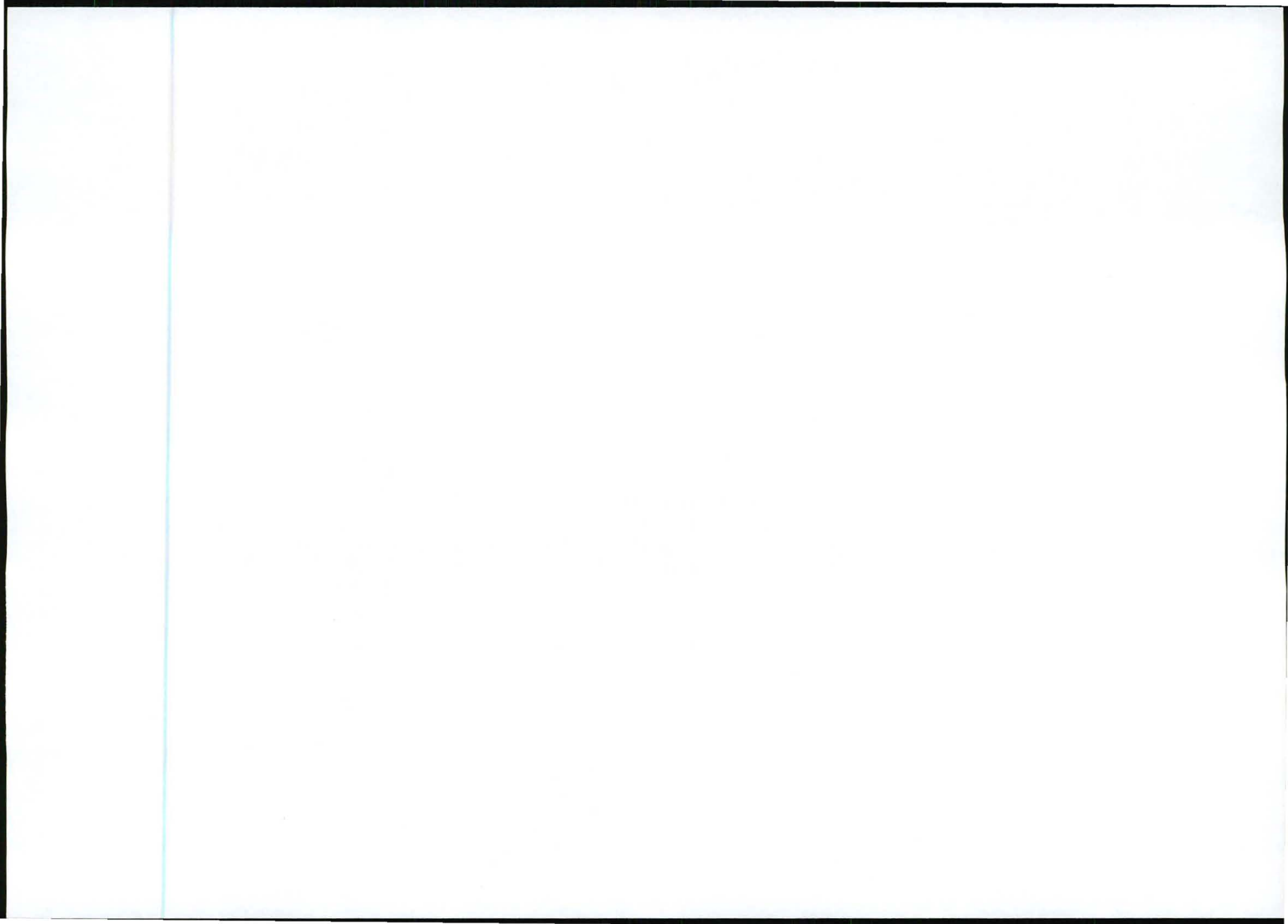
Applicant: TASMAN PACIFIC MINERALS LIMITED

Farms: RIVER GLEN 221 (REMAINING) AND VARIOUS OTHER FARMS

District: CRADOCK

Mineral: URANIUM AND MOLYBDENUM ORE

Date: 11 NOVEMBER 2005



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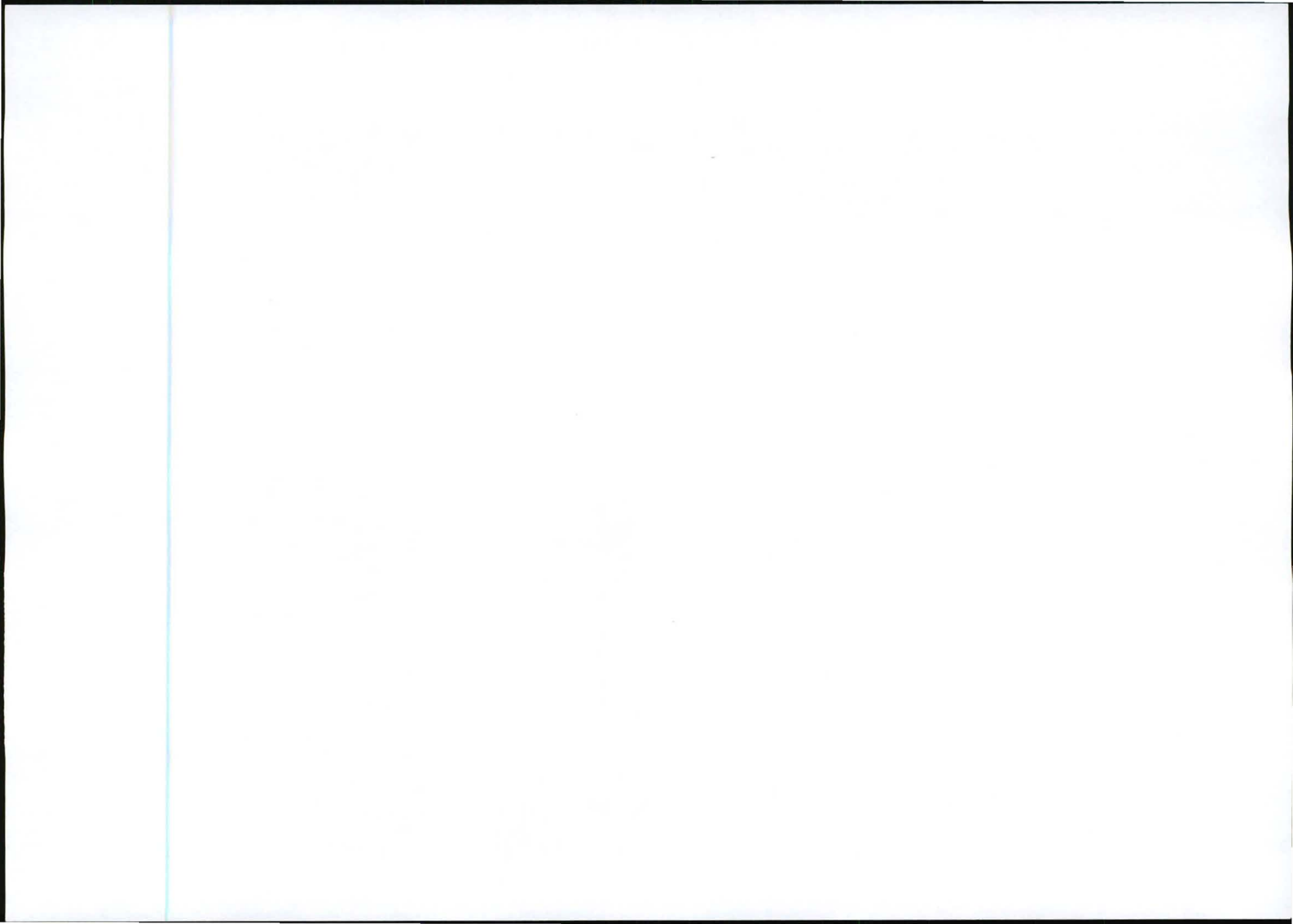
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## **A.1 INTRODUCTION**

This document aims to provide a simplified national standard for applicants for prospecting rights and mining permits to comply with the relevant legislation and environmental regulations as apply to their respective applications in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)(MPRDA).

Applicants in this sector of the mining industry typically disturb smaller surface areas of land, whether drilling boreholes, small trenches, or mining on a small area, less than 1,5 hectares of land, under a mining permit as contemplated in Section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)



## A.2 SCOPE

This document is intended for use by applicants for mining permits and prospecting rights. Typically, operations in this sector of the mining industry:

- Use little or no chemicals to extract mineral from ore,
- Work on portions of land of 1,5 hectares in size or smaller,
- Disturb the topography of an area somewhat but have no significant impact on the geology

## A.3 PURPOSE

This document aims to :

- Provide a national standard for the submission of Environmental Management Plans for the types of applications mentioned above.
- Ensure compliance with Regulation 52 of the MPRDA.
- Assist applicants by providing the information that the Department of Minerals and Energy (DME) requires in a simple language and in a structured, prescribed format, as contemplated in Regulation 52 (2) of the (MPRDA).
- Assist regional offices of the DME to obtain enough information about a proposed prospecting/ reconnaissance or mining permit operation to assess the possible environmental impacts from that operation and to determine corrective action even before such right is granted and the operation commences.

This document aims both to provide the DME regional offices with enough information about applicants for mining permits and applicants with guidance on environmental management matters pertaining to the mitigation of environmental impacts arising from their operations. Given this dual focus and the generic nature of the document, it might not be sufficient for all types of operations under various circumstances.

The document may therefore be altered or added to as the particular circumstances of the application in question may require.

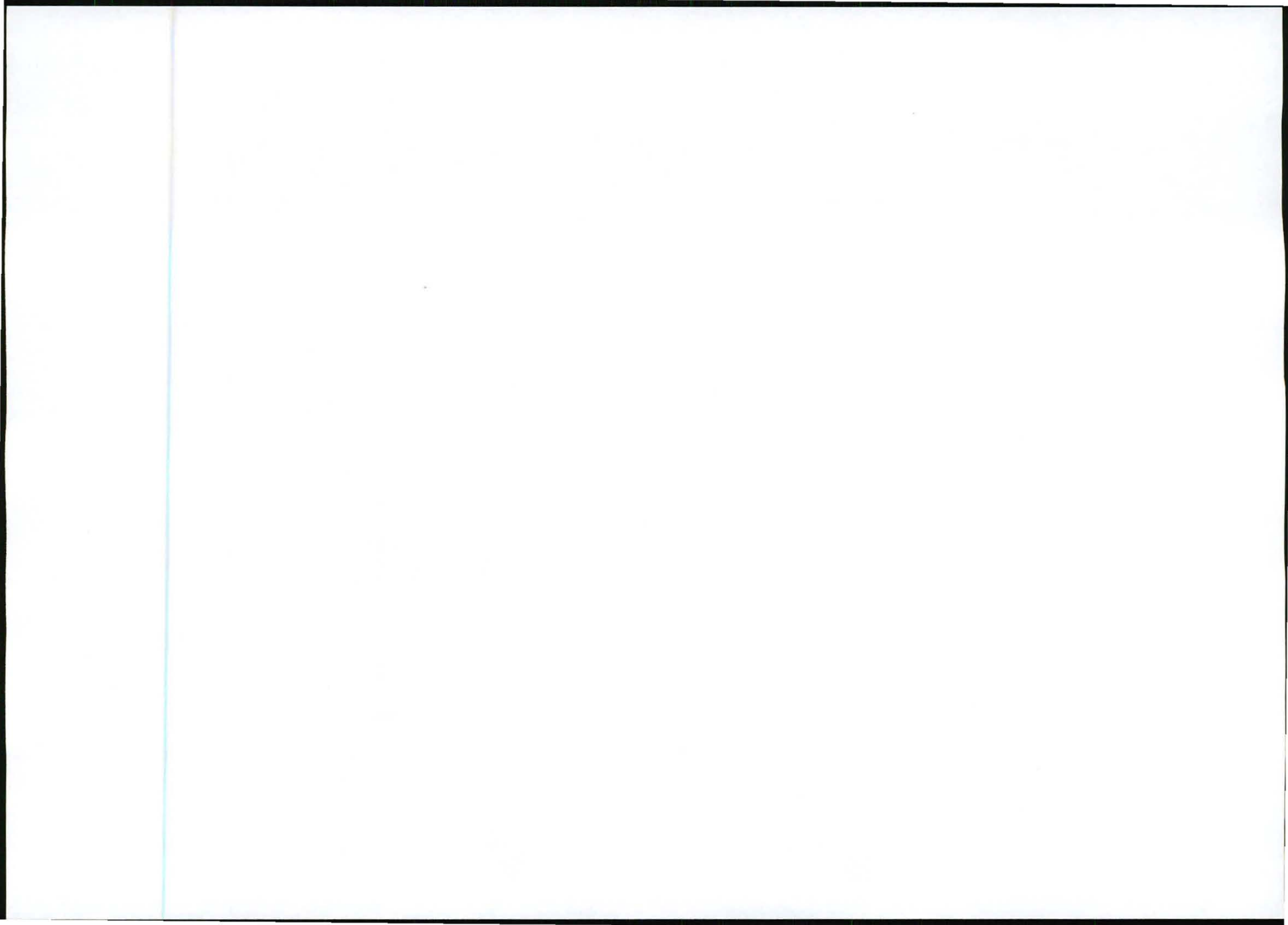
## A.4 USE OF THE DOCUMENT:

This document is designed for use by non-professionals and newcomers to the environmental management industry and it incorporates a *very simple* Environmental Impact Assessment (EIA). The EIA is contained in Section C of this document and was designed specifically with the target sectors of the mining industry (described in A.2 above) in mind.

The aim is ultimately to (a) gather information from applicants themselves; (b) to assess the impact of the operation based on that information and then (c) to guide the applicant to mitigate environmental impacts to limit damage to the environment.

Section B of the document gathers demographic information about the applicant. Section C gathers the information that will be used in the Environmental Impact Assessment. The applicant must complete the relevant sections of this document, but the regional office of the DME will do the scoring of these for the impact assessment rating in Section D.

Section F (the Environmental Management Plan) of the document is prescriptive and gives guidance to the miner or prospector on how to limit the damage of the operation on the environment. This part may be added to by the regional manager, who has the prerogative to decide whether this Environmental Management Plan will adequately address the environmental impacts expected from the operation or whether additional requirements for proper environmental management need to be set. Where these additional requirements are set, they will appear in Section G of this document. The Environmental Management Plan (Section F) of the document is

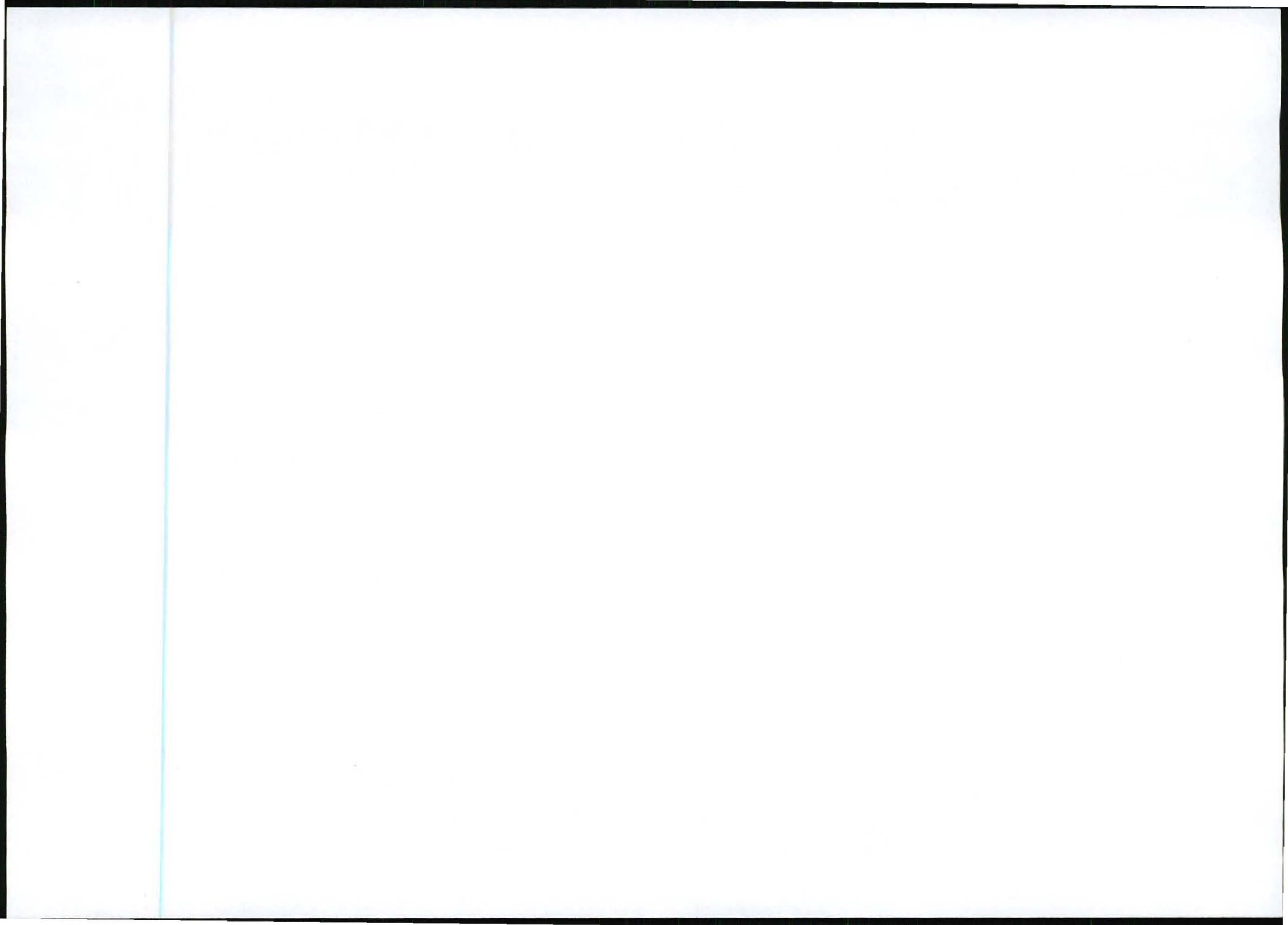


legally binding once approved and, in the undertaking contained in Section H, the applicant effectively agrees to implement all the measures outlined in this Environmental Management Plan.

#### A.5 LEGISLATION/ REGULATIONS

The relevant sections of Mineral and Petroleum Resources Development Act and its supporting Regulations are summarised below for the information of applicants. The onus is on the applicant to familiarise him/herself with the provisions of the full version of the Mineral and Petroleum Resources Development Act and its Regulations.

Section of Act	Legislated Activity/ Instruction/ Responsibility or failure to comply	Penalty in terms of Section 99
5(4)	No person may prospect, mine, or undertake reconnaissance operations or any other activity without an approved EMP, right, permit or permission or without notifying land owner	R 100 000 or two years imprisonment or both
19	Holder of a Prospecting right must: lodge right with Mining Titles Office within 30 days; commence with prospecting within 120 days, comply with terms and conditions of prospecting right, continuously and actively conduct prospecting operations; comply with requirements of approved EMP, pay prospecting fees and royalties	R 100 000 or two years imprisonment or both
20(2)	Holder of prospecting right must obtain Minister's permission to remove any mineral or bulk samples	R 100 000 or two years imprisonment or both
Section of Act	Legislated Activity/ Instruction/ Responsibility or failure to comply	Penalty in terms of Section 99
26(3)	A person who intends to beneficiate any mineral mined in SA outside the borders of SA may only do so after notifying the Minister in writing and after consultation with the Minister.	R 500 000 for each day of contravention
28	Holder of a mining right or permit must keep records of operations and financial records AND must submit to the DG: monthly returns, annual financial report and a report detailing compliance with social & labour plan and charter	R 100 000 or two years imprisonment or both
29	Minister may direct owner of land or holder/applicant of permit/right to submit data or information	R 10 000
38(1)(c)	Holder of permission/permit/right MUST manage environmental impacts according to EMP and as ongoing part of the operations	R 500 000 or ten years imprisonment or both.
42(1)	Residue stockpiles must be managed in prescribed manner on a site demarcated in the EMP	A fine or imprisonment of up to six months or both
42(2)	No person may temporarily or permanently deposit residue on any other site than that demarcated and indicated in the EMP	A fine or imprisonment of up to six months or both
44	When any permit/right/permission lapses, the holder may not remove or demolish buildings, which may not be demolished in terms of any other law, which has been identified by the Minister or which is to be retained by agreement with the landowner.	Penalty that may be imposed by Magistrate's Court for similar offence
92	Authorised persons may enter mining sites and require holder of permit to produce documents/ reports/ or any material deemed necessary for inspection	Penalty as may be imposed for perjury
94	No person may obstruct or hinder an authorised person in the performance of their duties or powers under the Act.	Penalty as may be imposed for perjury
95	Holder of a permit/right may not subject employees to occupational detriment on account of employee disclosing evidence or information to authorised person (official)	Penalty as may be imposed for perjury
All sections	Inaccurate, incorrect or misleading information	A fine or imprisonment of up to six months or both
All sections	Failure to comply with any directive, notice, suspension, order, instruction, or condition issued	A fine or imprisonment of up to six months or both





## A.6 OTHER RELEVANT LEGISLATION

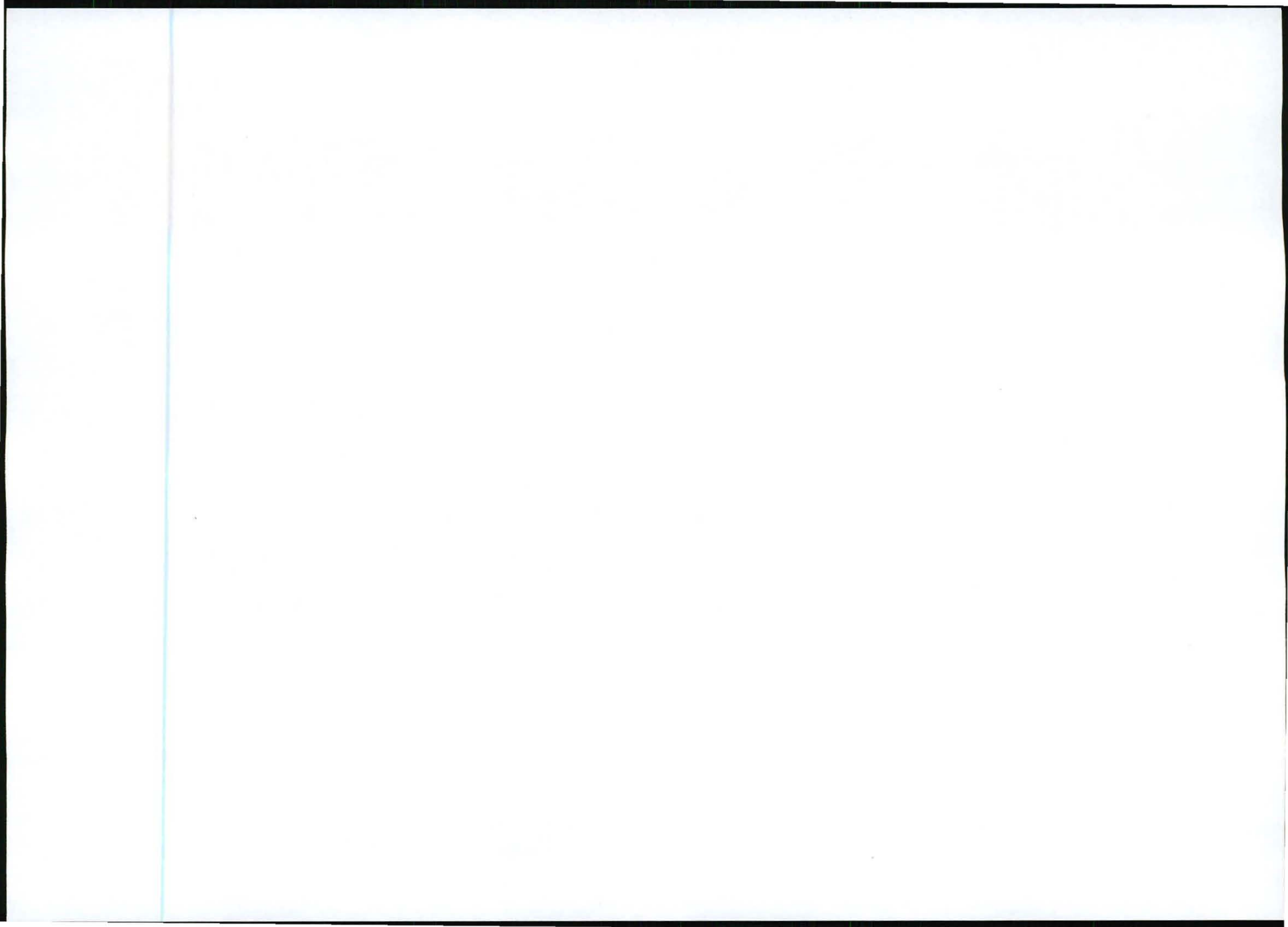
Compliance with the provisions of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) and its Regulations does not necessarily guarantee that the applicant is in compliance with other Regulations and legislation. Other legislation that may be immediately applicable includes, but are not limited to:

- National Monuments Act, 1969 (Act 28 of 1969).
- National Parks Act, 1976 (Act 57 of 1976)
- Environmental Conservation Act, 1989 (Act 73 of 1989)
- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965)
- The National Water Act, 1998 (Act 36 of 1998)
- Mine Safety and Health Act, 1996 (Act 29 of 1996)
- The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).

## A.7 WORD DEFINITIONS

In this document, unless otherwise indicated, the following words will have the meanings as indicated here:

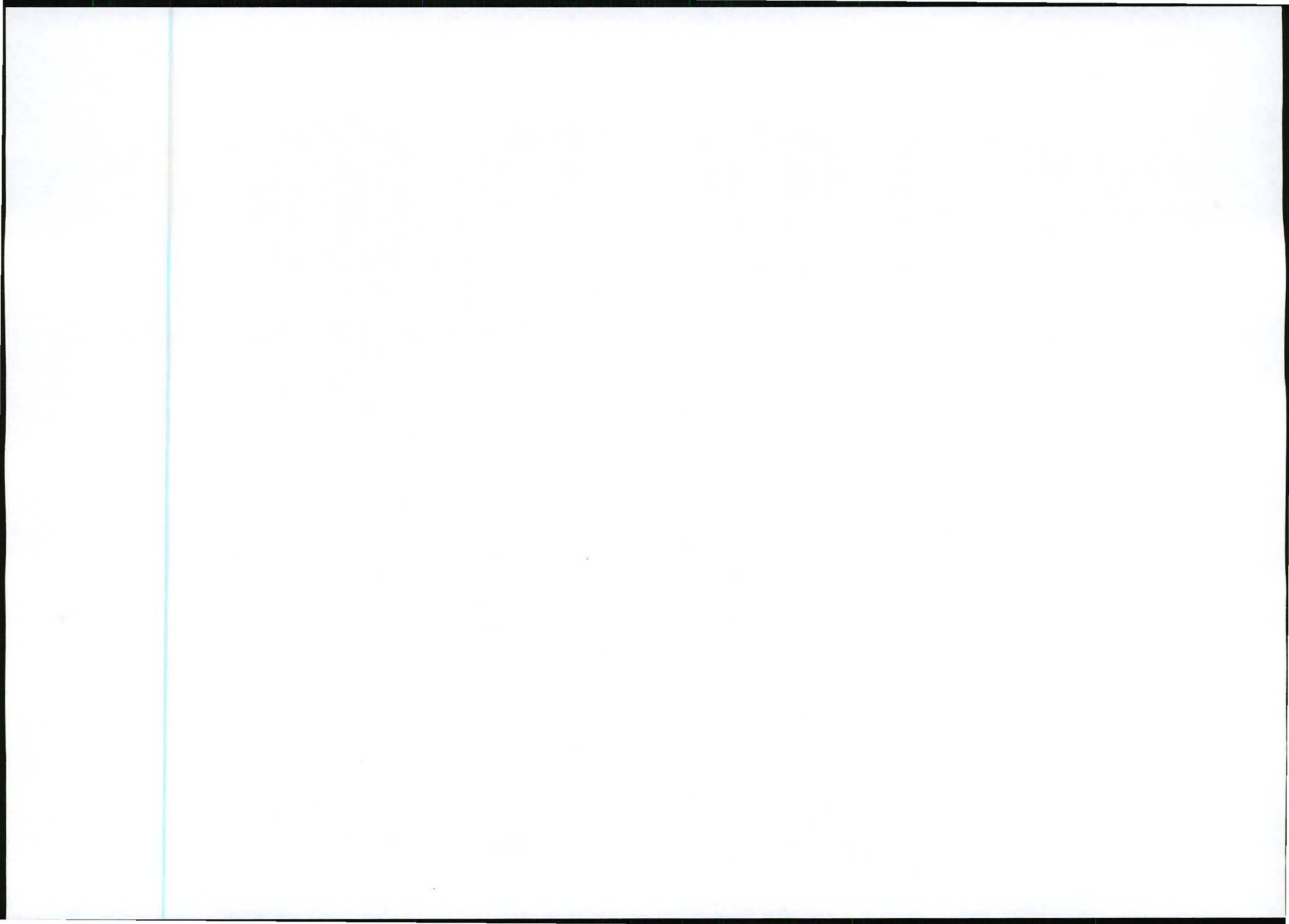
<b>Act (The Act)</b>	Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
<b>Borehole</b>	A hole drilled for the purposes of prospecting i.e. extracting a sample of soil or rock chips by pneumatic, reverse air circulation percussion drilling, or any other type of probe entering the surface of the soil.
<b>CARA</b>	The Conservation of Agricultural Resources Act
<b>EIA</b>	An Environmental Impact Assessment as contemplated in Section 38(1) (b) of the Act
<b>EMP</b>	an Environmental Management Plan as contemplated in Section 39 of the Act
<b>Fauna</b>	All living biological creatures, usually capable of motion, including insects and predominantly of protein-based consistency.
<b>Flora</b>	All living plants, grasses, shrubs, trees, etc., usually incapable of easy natural motion and capable of photosynthesis.
<b>Fence</b>	A physical barrier in the form of posts and barbed wire and/or "Silex" or any other concrete construction, ("palisade"- type fencing included), constructed with the purpose of keeping humans and animals within or out of defined boundaries.
<b>House</b>	any residential dwelling of any type, style or description that is used as a residence by any human being
<b>NDA</b>	National Department of Agriculture
<b>NWA</b>	National Water Act, Act 36 of 1998
<b>Pit</b>	Any open excavation
<b>"Porrel"</b>	The term used for the sludge created at alluvial diamond diggings where the alluvial gravels are washed and the diamonds separated in a water-and-sand medium.
<b>Topsoil</b>	The layer of soil covering the earth which- <ol style="list-style-type: none"> <li>(a) provides a suitable environment for the germination of seed;</li> <li>(b) allows the penetration of water;</li> <li>(c) is a source of micro-organisms, plant nutrients and in some cases seed; and</li> <li>(d) is not of a depth of more than 0,5 metres or such depth as the Minister may prescribe for a specific prospecting or exploration area or mining area.</li> </ol>
<b>Trench</b>	A type of excavation usually made by digging in a line towards a mechanical excavator and not pivoting the boom – a large, U-shaped hole in the ground, with vertical sides and about 6 – 8 metres in length. Also a prospecting trench.
<b>Vegetation</b>	Any and all forms of plants, see also Fauna



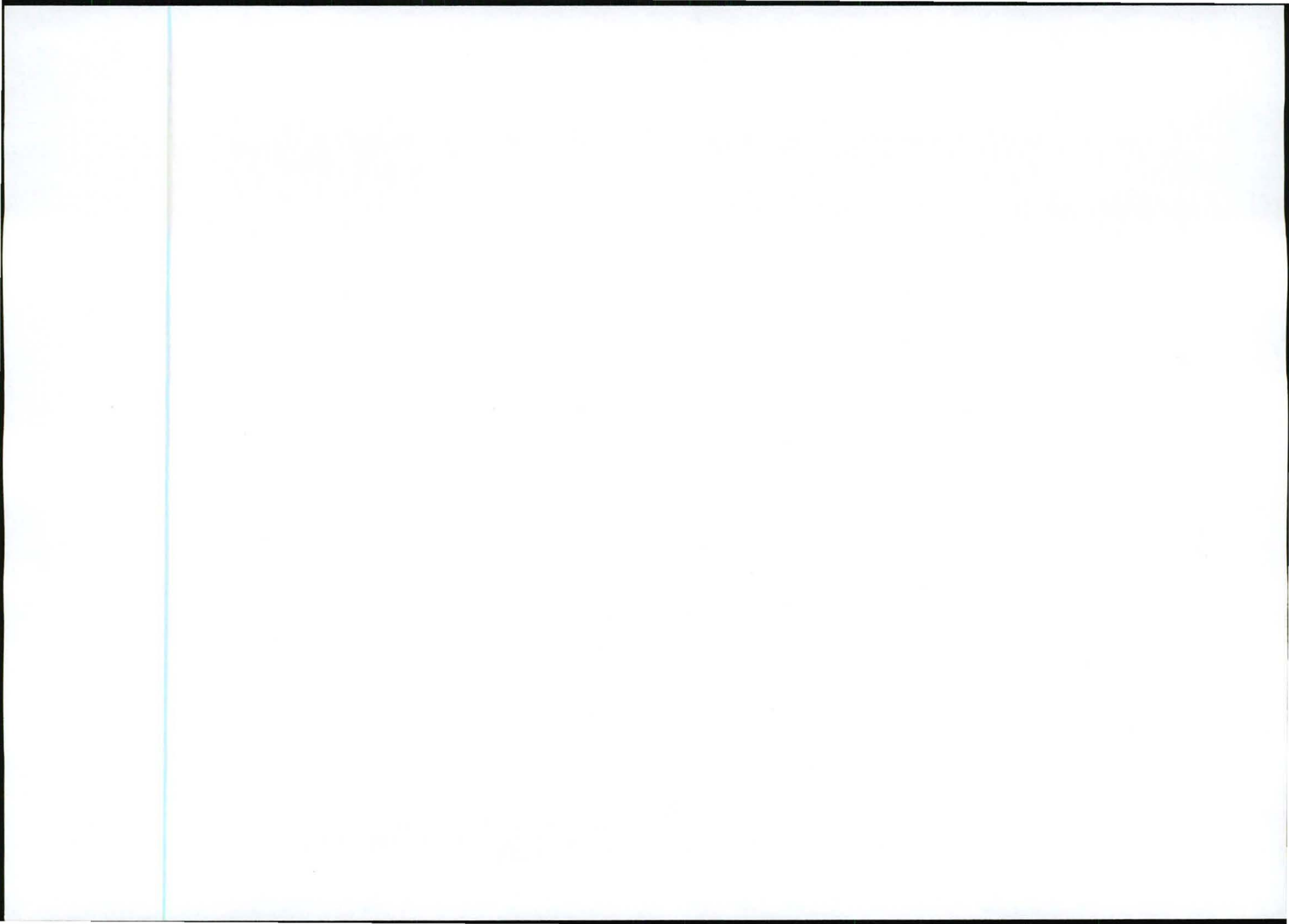
<b>DWAF</b>	The Department of Water Affairs and Forestry – both national office and their various regional offices, which are divided across the country on the basis of water catchment areas.
<b>MPRDA</b>	the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
<b>EMPlan</b>	An Environmental Management Plan as contemplated in Regulation 52 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) – this document.

**B. BIOGRAPHIC DETAILS OF THE APPLICANT:**

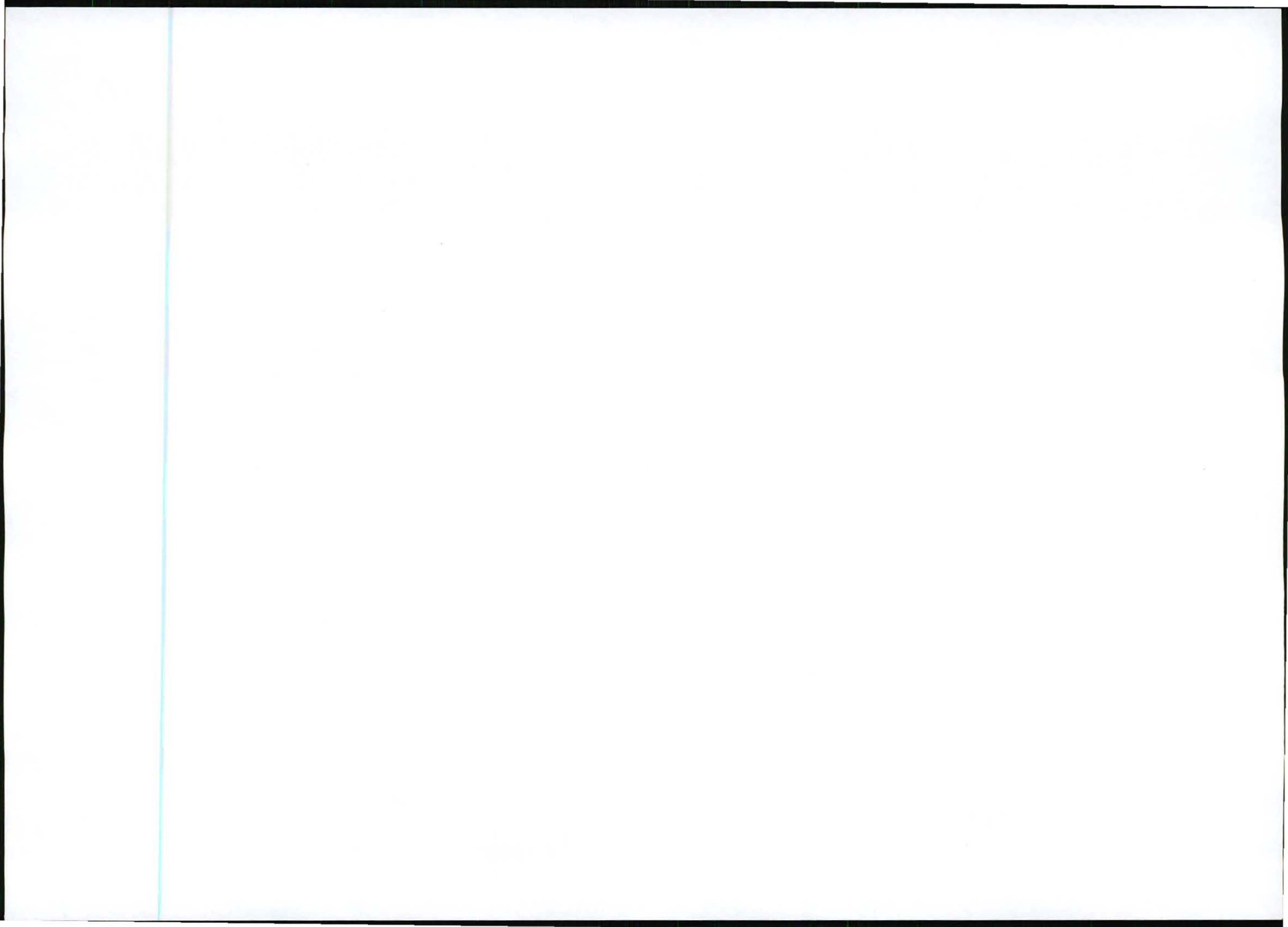
<b>B 1.1</b> Full name (and surname) of person or company applying for permit or right	<b>TASMAN PACIFIC MINERALS LIMITED</b>
<b>B 1.2</b> ID number of person or company/ CC registration number	<b>112 181 665</b>
<b>B 1.3</b> Postal address	<b>C/- MMAKAU MINING (PTY) LTD. P O BOX 2236, HOUGHTON 2236</b>
<b>B 1.4</b> Physical/ residential address	<b>34 EIGHTH STREET HOUGHTON 2041</b>
<b>B 1.5</b> Applicant's telephone number	<b>+2711 880 0206</b>
<b>B 1.6</b> Applicant's cellular phone number	<b>076 373 6524</b>
<b>B 1.7</b> Alternative contact's name	<b>BRIDGETTE RADEBE</b>
<b>B 1.8</b> Alternative contact's telephone/cell phone numbers	<b>+27 11 880 0207 (Fax) +27 11 880 0206 (Tel.)</b>
<b>B 2.1</b> Full name of the property on which <u>prospecting</u> operations will be conducted	<b>RIVER GLEN 221 REM., DE GEERS KRAAL UITSPANNING 222 REM.,DENMARK 118 REM.,DENMARK 119 REM.,DENMARK 119/1.,GEERSKRAAL OUTSPAN 223 REM.,GROENE VALLEI 226 REM.,FARM 585 REM.,FARM 73 REM.,RIVER GLEN 221/1.,GROENE VALLEI 226/1.,GROENE VALLEI 226/2.,FARM 117/1.,ROODE HEUVEL 74/2.,DOORNFONTEIN 113/4.,FARM 115 REM.,OSKOM 116 REM.,FARM 120 REM.,FARM 590 REM.,OSKOM 116/1.</b>
<b>B 2.2</b> Name of the subdivision	<b>N/A</b>
<b>B 2.3</b> Approximate center of prospecting area: Latitude	<b>25 22 27 sec East</b>
Longitude	<b>32 - - South</b>



B 2.4 Magisterial district	<b>CRADOCK</b>	
B 2.5 Name of the registered owner of the property	River Glen 221 Rem.	L. Breytenbach
	De Geerskraal Uitspanning 222 Rem.	A T van Heerden
	Denmark 118 Rem.	A T van Heerden
	Denmark 119 Rem.	A T van Heerden
	Denmark 119/1	A T van heerden
	Geers Kraal Outspan 223 Rem.	M C W van Heerden
	Groene Vallei 226 Rem.	M C W van Heerden
	Farm 585 Rem.	D C Holmes
	Farm 73 Rem.	A S Jordaan
	River Glen 221/1	J Z du Plessis
	Groene Vallei 226/1	W H Janse van Rensburg
	Groene Vallei 226/2	J J Sieberhagen
	Farm 117/1	J J Sieberhagen
	Roode Heuvel 74/2	J J Sieberhagen
	Doornfontein 113/4	J J Sieberhagen
	Farm 115 Rem.	J J Sieberhagen
	Oskom 116 Rem.	J J Sieberhagen
	Farm 120 Rem.	I P Tham
	Farm 590 Rem.	I P Tham
	Oskom 116/1	E M White
	Prospecting Area	National Nuclear Regulator
B 2.6 His/her Telephone number	<p><b>River Glen 221 Rem.</b> L. Breytnbach 054 331-3663</p> <p><b>De Geerskraal Uitspanning 222 Rem.</b> A T van Heerden 082 764 9656</p> <p><b>Denmark 118 rem.</b> A T van Heerden 082 764 9656</p> <p><b>Denmark 119 Rem.</b> A T van Heerden 082 764 9656</p> <p><b>Denmark 119/1</b> A T van Heerden 082 764 9656</p> <p><b>Geerskraal Outspan 223 Rem.</b> M C W van Heerden 082 455 2653</p> <p><b>Groene Vallei 226 Rem.</b> M C W van Heerden 082 455 2653</p> <p><b>Farm 585 Rem.</b> D C Holmes 048 881-4634</p> <p><b>Farm 73 Rem.</b> A S Jordaan 072 729 3558</p>	



	<p><b>River Glen 221/1</b> J Z du Plessis 084 892 1853</p> <p><b>Groene Vallei 226/1</b> W H Janse van Rensburg 083 957 8822</p> <p><b>Groene Vallei 226/2</b> J J Sieberhagen 084 881- 2410</p> <p><b>Farm 117/1</b> J J Sieberhagen 048 881- 2419</p> <p><b>Roode Heuvel 74/2</b> J J Sieberhagen 048 881- 2419</p> <p><b>Doornfontein 113/4</b> J J Sieberhagen 048 881- 2419</p> <p><b>Farm 115 Rem.</b> J J Sieberhagen 048 881-2419</p> <p><b>Oskom 116 Rem.</b> J J Sieberhagen 048 881-2419</p> <p><b>Farm 120 Rem.</b> I P Tham 082 652 6610</p> <p><b>Farm 590 Rem.</b> I P Tham 082 652 6610</p> <p><b>Oskom 116/1</b> E M White 083 391 1095</p> <p><b>Prospecting Area</b> National Nuclear Regulator 012 674-7100</p>
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## B 2.7 His/ her Postal address

**River Glen 221 Remainder**

L Breytenbach  
P O Box 184  
Uppington, 9880

**De Geerskraal Uitspanning 222 Rem.**

A T van Heerden  
P O Box 170  
Cradock, 5880

**Denmark 118 Remainder.**

A T van Heerden  
P O Box 170  
Cradock, 5880

**Denmark 119 Remainder.**

A T van Heerden  
P O Box 170  
Cradock, 5880

**Denmark 119/1**

A T van Heerden  
P O Box 170  
Cradock, 5880

**Geerskraal Outspan 223 Rem.**

M C W van Heerden  
P O Box 428  
Middelburg, 5900

**Groene Vallei 226 Rem.**

M C W van Heerden  
P O Box 428  
Middelburg, 5900

**Farm 585 Remainder**

D C Holmes  
10 Sering Street  
Cradock, 5880

**Farm 73 Remainder**

A S Jordaan  
P O Box 438  
Cradock, 5880

**River Glen 221/1**

J Z du Plessis  
P O Box 88  
Cradock, 5880

**Groene Vallei 226/1**

W H Janse van Rensburg  
P O Box 60  
Cradock, 5880

**Groene Vallei 226/2**

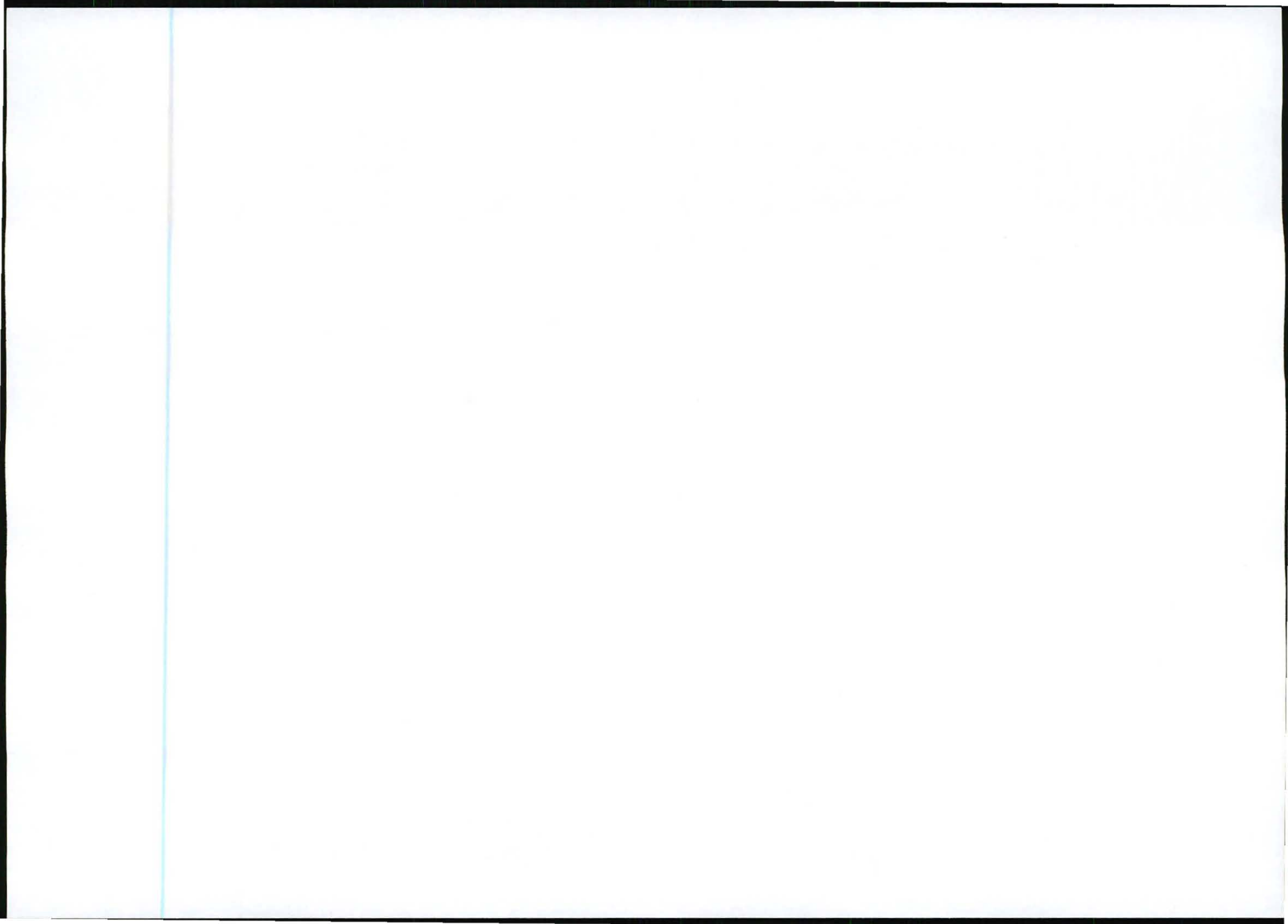
J J Sieberhagen  
P O Box 330  
Cradock, 5880

**Farm 117/1**

J J Sieberhagen  
P O Box 330  
Cradock, 5880

**Roode Heuvel 74/2**

J J Sieberhagen  
P O Box 330  
Cradock, 5880



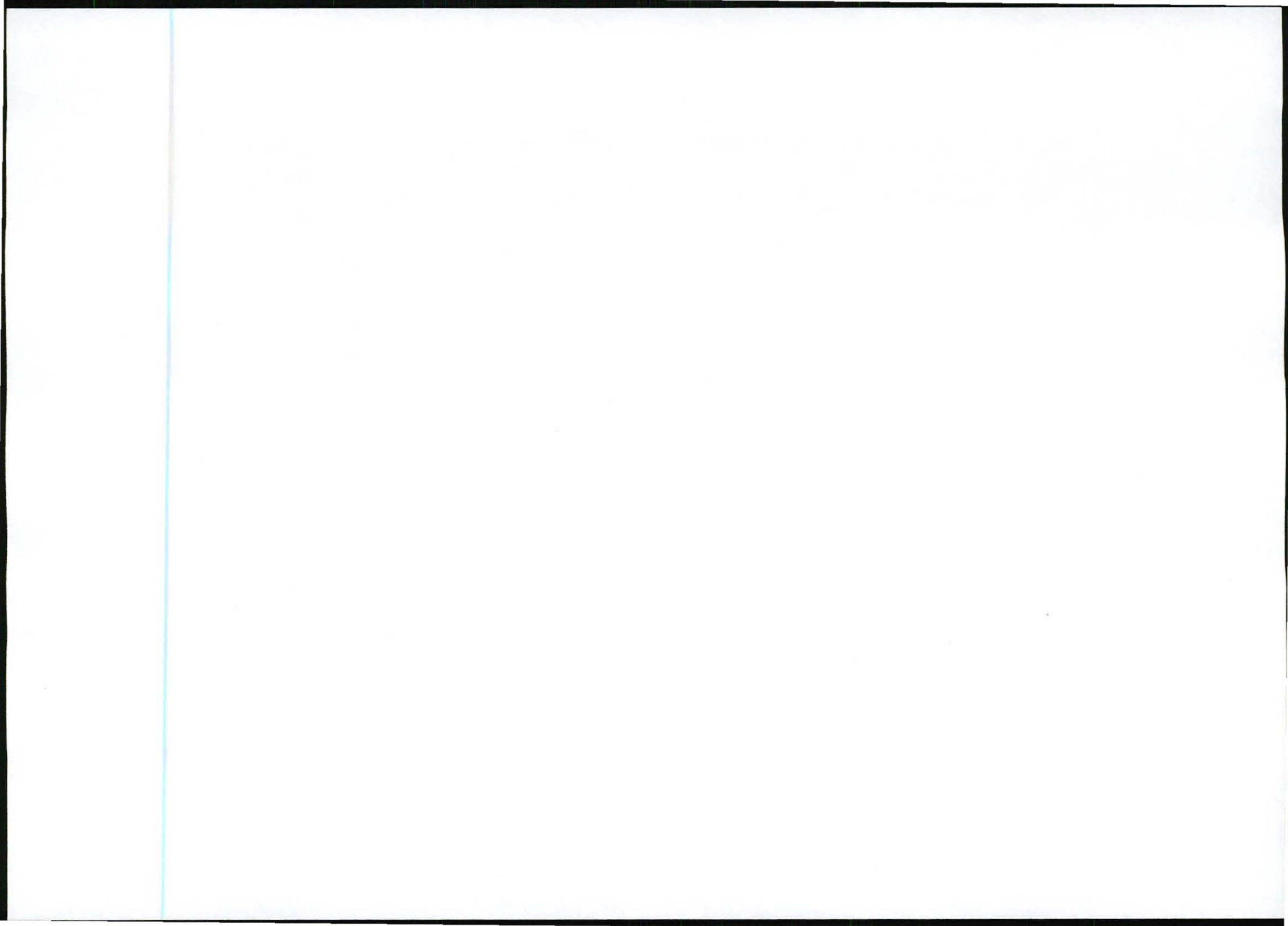
	<p><b>Doornfontein 113/4</b> J J Sieberhagen P O Box 330 Cradock,5580</p> <p><b>Farm 115 Remainder.</b> J J Sieberhagen P O Box 330 Cradock,5580</p> <p><b>Oskom 116 Remainder</b> J J Sieberhagen P O Box 330 Cradock,5580</p> <p><b>Farm 120 Remainder</b> I P Tham P O Box 25 Cradock,5580</p> <p><b>Farm 590 Remainder</b> I P Tham P O Box 25 Cradock,5580</p> <p><b>Oskom 116/1</b> E M White 10 Plymouth Drive Nahoon,5241.</p> <p><b>Prospecting Area</b> National Nuclear Regulator P O Box 7106 Centurian 0046.</p>
<p><b>B 2.8 Current uses of surrounding areas : The area is characterized by a mixture of agricultural activities including crops such as maize, vegetables with irrigation, cattle and game farming.</b></p>	
<p><b>B 2.9 Are there any other, existing land uses that impact on the environment in the proposed prospecting area? NO</b></p>	
<p><b>B 2.10 What is the name of the nearest town? Cradock</b></p>	

**C. ENVIRONMENTAL IMPACT ASSESSMENT:**

The information provided in this section will enable officials to determine how serious the impact of the prospecting/mining operation will be.

**DESCRIBE THE ENVIRONMENT THAT WILL BE AFFECTED BY THE PROPOSED PROSPECTING/MINING OPERATIONS UNDER THE FOLLOWING HEADINGS:**

<b>C.1 DESCRIPTION OF THE ENVIRONMENT LIKELY TO BE AFFECTED BY PROPOSED PROSPECTING/MINING OPERATIONS: (REGULATION 52(2)(a))</b>			
<b>ENVIRONMENTAL ELEMENT/ IMPACTOR</b>	<b>VALUE</b>	<b>TICK</b>	<b>OFFICE USE.</b>



C 1.1 What does the landscape surrounding the proposed operation look like? (Open veldt/ valley/ flowing landscape/ steep slopes)			
Open flat-topped landscape shaped by many dolerite dykes and sills.			
C 1.2 Describe the type of soil found on the surface of the site		The Beaufort Group sandstones and shales dominate the landscape.	
	VALUE	TICK	OFFICE USE
C 1.3 How deep is the topsoil?	0 – 300mm	x	8
	300 – 600mm		4
	600mm +		2
C 1.4 What <i>plants, trees and grasses</i> grow naturally in the area around the site?			
<b>TREES:</b> Trees are not abundant, except along dry river beds where Sweet thorn, Acacia karroo is a common element. Shrubs included Bitterkaroo Pentzia, Incana Kapokbush, Eriocephalus Ericoides, Thorkapok, e Spinescent and Nermannia spp.			
<b>GRASS:</b> The open grassy shrub-savanna landscape is dominated by the following grasses; Aristioa spp. Eragiostis spp and Reclgress Themedia triadro.			
C 1.5 What <i>animals</i> naturally occur in the area?			
The Areas around the proposed project are over grazed. The most obvious faunal activity is the local inhabitant's livestock. No rare or endangered animal species were identified near The proposed prospecting sites.			
	VALUE	TICK	OFFICE USE
C 1.6 Are there any <i>protected areas</i> (game parks/nature reserves, monuments, etc) close to the proposed operation?	Yes		4
	No	X	0
C 1.7 What mineral are you going to prospect for		Uranium and Molybdenum ore	
C 1.8 Describe the type of equipment that will be used :			
3) The early geological mapping-ground radiometric investigation referred to in phases 1, 2 and 3 of the prospecting programme will be conducted by a geologist accompanied by two field assistants. The following equipment will be used for the purposes : I X 4XE LDV, Various tools, Hammers, Steel markers, Sampling bags, Scintillometers, Magnetometers, GPS instrument, Computer, Protective clothing and First Aid Kits.			
2) The EMP will be amended once the results of the geological, geochemical and geophysical surveys have indicated optimum locations for scout drill holes.			
1) This environmental management plan is applicable to phases 1, 2 and 3 referred in the prospecting programme attached hereto			
C.2 HOW WILL THE PROPOSED OPERATION IMPACT ON THE NATURAL ENVIRONMENT? (REGULATION 52(2)(b))			
ENVIRONMENTAL ELEMENT/ IMPACTOR	VALUE	TICK	OFFICE USE
C 2.1 What will the ultimate depth of the proposed prospecting operations be ?	0 – 5m		2
	6 – 10m		4
	10 – 25m	X	8
	25m +		10

