

BP TULBAGH RENOSTERVELD PROJECT



The Cape Floristic Region (CFR) is the smallest and richest floral kingdom of the world. In an area of approximately 90 000km² there are over 9 000 plant species found (Goldblatt & Manning 2000).

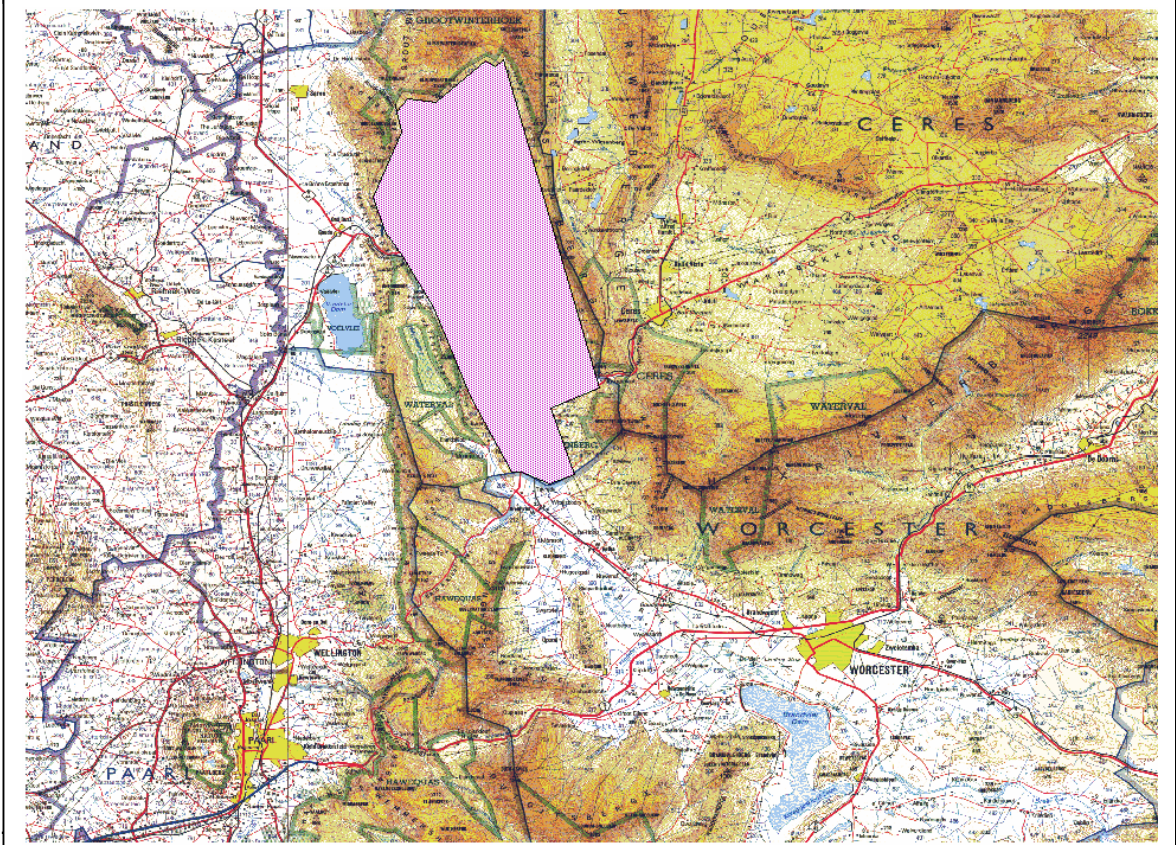
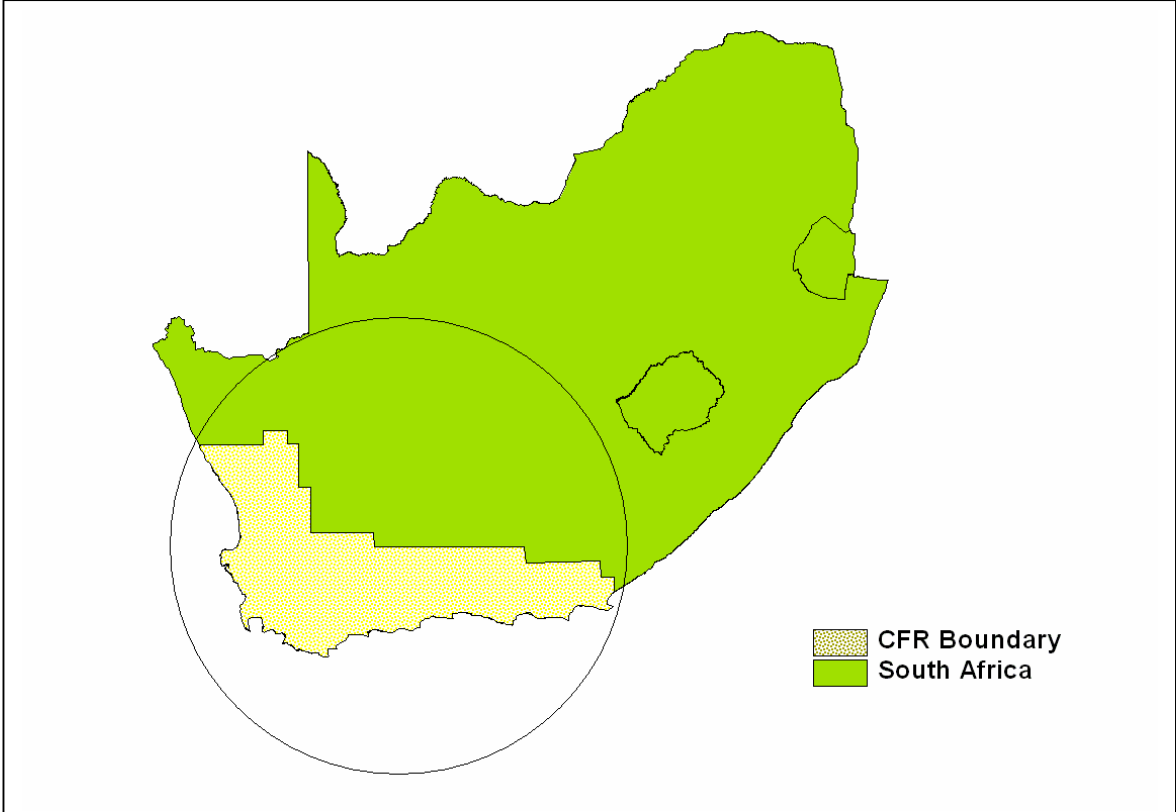
The CFR is recognized as one of the 33 global biodiversity hotspots (Myers, 1990) and has recently received World Heritage Status.

In 2002 the Cape Action Plan for the Environment (CAPE) programme identified the lowlands of the CFR as 100% irreplaceable, meaning that to achieve conservation targets all lowland fragments would have to be conserved and no further loss of habitat should be allowed. **Renosterveld**, an asteraceous shrubland that predominantly occurs in the lowland areas of the CFR, **is the most threatened vegetation type in South Africa**. Only five percent of this highly fragmented vegetation type still remains (Von Hase et al 2003). Most of these Renosterveld fragments occur on privately owned land making it the least represented vegetation type in the South African Protected Areas network. More importantly, because of the fragmented nature of Renosterveld it has a high proportion of plants that are threatened with extinction. The Custodians of Rare and Endangered Wildflowers (CREW) project, which works with civil society groups in the CFR to update information on threatened plants, has identified the Tulbagh valley as a high priority for conservation action. This is due to the relatively large amount of Renosterveld that remains in the valley and the high amount of plant endemism. The CAPE program has also identified areas in need of fine scale plans and the Tulbagh area falls within one of these: The Upper Breede River planning domain.

There are 22 endemic plant species and 46 threatened plant species occurring in the Tulbagh Valley

The predominant land-use activity in this area is agriculture, which poses a significant threat to the survival of these species. Through providing decision-makers with an updated threatened species list and a map of vegetation fragments with known localities of threatened species plotted on these we aim to help prioritise conservation action in the Tulbagh Valley.

Project study area



Tulbagh Project phase 1 boundary

Involve volunteers from local communities in surveying Renosterveld fragments to determine the conservation and threat status of species and prioritize sites in need of conservation.



- ❖ **Survey threatened Renosterveld fragments for populations of threatened plant species**
- ❖ **Build local awareness of the status of threatened species by:**
 - **Involving locals in the surveying of Renosterveld fragments**
 - **Informing landowners of the threatened plant populations occurring on their land**
 - **Providing local authorities with threatened species locality information for inclusion in Spatial Development Frameworks (SDF's) and Integrated Development Plans (IDP's)**
- ❖ **Update Red List status of plant species occurring in the Tulbagh area and identify species in need of recovery plans**
- ❖ **Determine which fragments qualify as Important Plant Areas and produce a list of priority sites to be conserved by Conservation Agencies.**

Setting up the Project

Volunteer group



- ❖ We approached the Botanical Society of South Africa (BOTSOC) to obtain a list of all their members living in and around the Tulbagh Valley. The BOTSOC has a long history of involvement in conservation and they have about 15 000 members across the country. Their mission is to win the hearts, minds and material support of individuals and organizations for the conservation, cultivation, study and wise use of the indigenous flora of southern Africa. Botsoc supplied us with a list of all their members from the Tulbagh Area
- ❖ We setup a meeting with the Botsoc volunteers and invited other volunteers that we knew from the area to attend a meeting in Tulbagh
- ❖ The meeting was held in Tulbagh and 13 local volunteers attended the meeting including 6 local landowners. We discussed the aims and objectives of the project and how the volunteers could become involved. We planned dates for the volunteers to receive training and assist the project team with the sampling of the renosterveld fragments.

Landowner contact

- ❖ The most important part of setting up the program was getting permission to visit the farms in the area. At first the project was not sure how landowners would respond to request for doing surveys on their land. Fortunately we found that at least 95% of the landowners we happy for us to visit their farms and complete the surveys.
- ❖ A list of all the relevant landowners was sourced from the local municipality, department of Agriculture and Nature conservation agencies.
- ❖ Landowners were contacted in advance and asked for permission to visit their farms. Some of the landowners requested official letters from the project. We provided official letters to these landowners explaining what the aims and objectives of the project are and how we intend doing the fieldwork.
- ❖ Most of the landowners were contacted by telephone before fieldtrips. Landowners were given an introduction and explanation of the project.
- ❖ After visiting a farm we ensured that we gave some feedback to the landowners. This was an extremely useful process because we managed to build good relationships with the landowners.
- ❖ All the farmers from the priority areas received formal feedback on what was found on their farms. Copies of the maps, species lists and management recommendations were given to these landowners.
- ❖ The relationships the project team built with the landowners has been useful for other conservation initiatives. The Biodiversity and Wine Initiative, Stewardship project and Landcare have involved some of the landowners from the priority areas in their conservation projects.

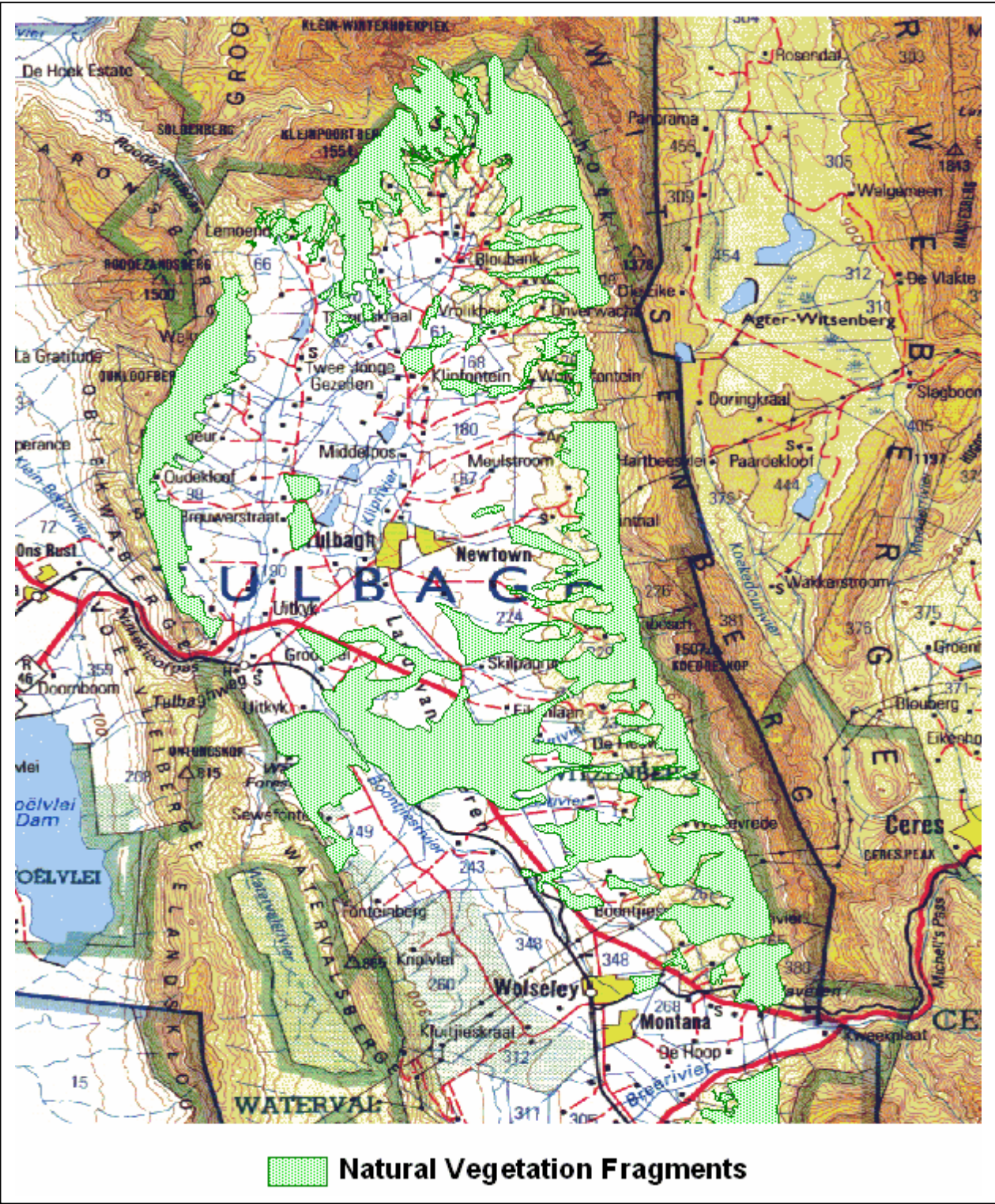
Identification guides and training



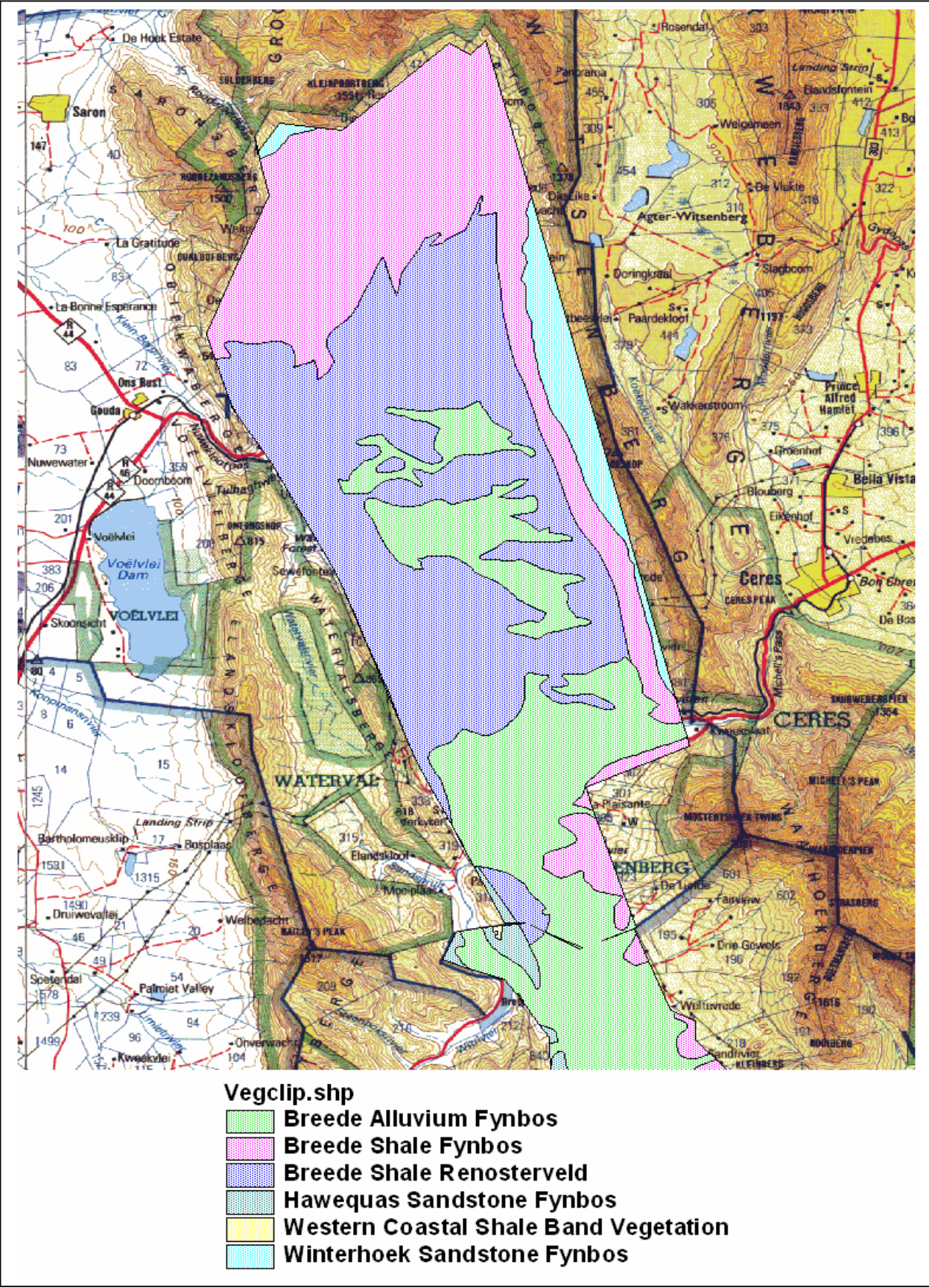
- To ensure that the volunteers could contribute to the monitoring and sampling activities we had to develop field identification guides.
- After the species list was put together for the area we proceeded to collect all the information.
- The guide has a short description of each species, flowering times, distribution and pictures of the plants. If we could not source pictures of the species we took photographs of the herbarium specimens and included it in the identification guide.
- After the guide was laminated and bound to make it easy and practical to carry in the field.
- Apart from being useful in the field to identify the rare and threatened species it assisted us with getting landowners interested in the species.
- Copies of the Id guide were made available to the Cape Nature Staff and the volunteers working on the project.

Renosterveld Fragments Map

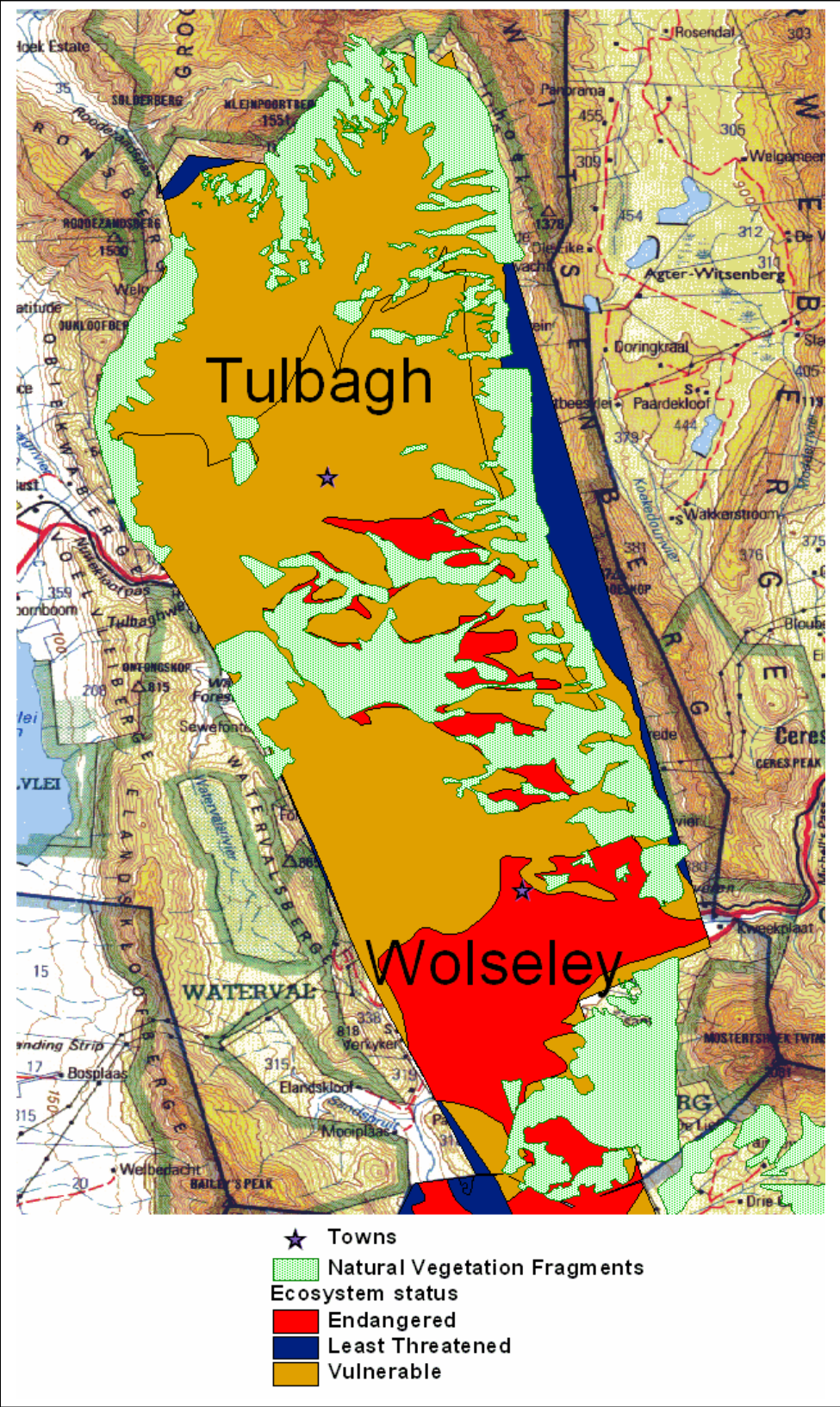
See attached Report for details. Appendix 1



Vegetation Map



Ecosystem Status Map



Vegetation types and Ecosystem status

There are 6 vegetation types represented in the Tulbagh Valley. In our study we concentrated on the lowlands of the Tulbagh Valley because those areas are under the most threat and pressure from agriculture and development. Three predominant vegetation types can be found on the lowlands

- ❖ **Breede Shale Renosterveld** – This vegetation type is characterized by occurring on the shale soils in the Tulbagh Valley. This vegetation type is most threatened because of the fertile nature of the soils. The vegetation is dominated by *Elytropappus rhinocerotis*, *Eriocephalus africanus* and a large number of geophytic species. **Only 69% of this vegetation type remains. It is classified as Vulnerable**
- ❖ **Breede Alluvium Fynbos** – This Vegetation type occurs on the alluvial soils which is much more stony than the shale soils. The vegetation is characterized by having components of both Fynbos and Renosterveld. Dominant species includes *Protea Nitida*, *Rafnia amplexicaulis*, *Montinia caryophyllacea* and *Ischyrolepis capensis*. **Only 42% of this vegetation type remains. It is classified as Endangered.**
- ❖ **Breede Shale Fynbos** – This vegetation type occurs on the footslopes of the Winterhoek and Witzenberg mountains. It has both renosterveld and fynbos elements. The dominant species are *Elytropappus rhinocerotis*, *Protea nitida*, *Stoebe plumosa* and *Leucadendron salignum*. **Only 70% of this vegetation type remains. It is classified as Vulnerable.**

In the Tulbagh Valley only a small proportion of Breede Shale Renosterveld still remains. It is critical to protect all the remaining fragments of this vegetation type.

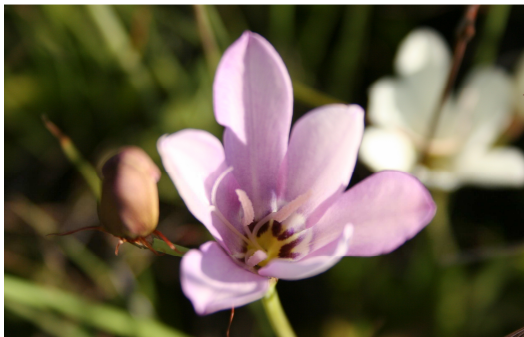


Sampling Sites Map

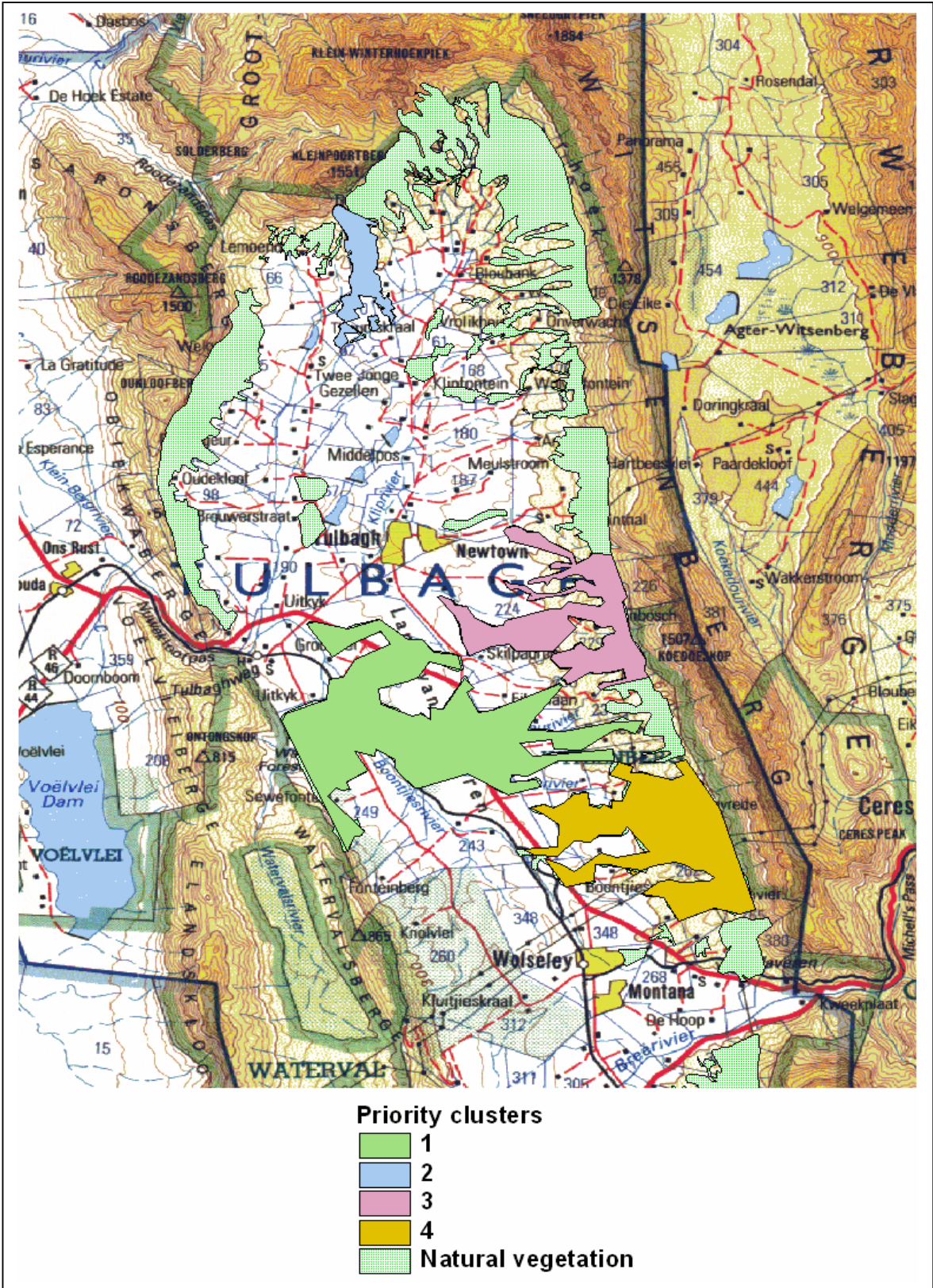


Sampling Sites

- ❖ 44 sites were sampled in the Tulbagh Valley.
- ❖ The biggest connected fragments were sampled first
- ❖ Sites where the vegetation was highly disturbed were not included in the sampling sites map. These sites were identified as disturbed beyond repair.
- ❖ Locality details, habitat information, dominant species, threatened and endemic species including population numbers and threat information was recorded at each site
- ❖ All data has been captured in a national database and is used for red listing and various other research projects.
- ❖ The data has been used by the Cape Nature Stewardship project to identify potential farms and landowners interested in conservation. The priority farms identified by the study will be the farms that the Stewardship project approaches to negotiate with landowners to conserve the natural vegetation remnants on their farms
- ❖ The sampling data collected by the project has been fed through the Fine Scale Planning Project, which will be developing a fine scale vegetation map for the whole upper Breede River Valley. They have used the Tulbagh Renosterveld Fragments map to identify natural vegetation and the sampling data to define the vegetation types and plan the additional fieldwork for the area.
- ❖ Locality and population data has been recorded for 22 Red Data Book species.
- ❖ During the study we discovered 2 new populations of critically endangered species.



Conservation Priorities Map



Priority Clusters

Priority Cluster 1

Farms	Special species count	Veld condition	Vegetation type
Grootvlei Leeurivier De Heuvel Goote Vallei	10	The veld condition in this cluster is very good. There are a few areas with scattered aliens and the most of the fragments have not been disturbed	This cluster represents about 90% of the Endangered Breede alluvium fynbos in the Tulbagh Valley.

Priority Cluster 2

Farms	Special species count	Veld condition	Vegetation type
Weltevrede Theuniskraal Welbedacht	6	The veld condition in this cluster is good. The cluster is well connected and provides an important biodiversity corridor up onto the Winterhoek mountains	This cluster represents the Vulnerable Breede shale fynbos. Although there are other areas where this vegetation type occurs this cluster has the most intact piece.

Priority Cluster 3

Farms	Special species count	Veld condition	Vegetation type
Schalkenbosch Skilpadrug	4	The corridors from the mountains to the lowlands are in good condition. There are large areas that are disturbed.	This cluster represents about 90% of the Endangered Breede alluvium fynbos in the Tulbagh Valley.

Priority Cluster 4

Farms	Special species count	Veld condition	Vegetation type
Boontjiesrivier Weltevrede Goedgevonden	5	Most of the low-laying fragments are disturbed and fragmented. The upper fragments are heavily infested with aliens	There are substantial corridors in this area but the connecting pieces must be rehabilitated. This cluster contains Breede alluvium fynbos and Breede shale renosterveld

Priority Species



Species	RDB Status	Description	No. of localities	Conservation Action needed
<i>Ixia vinacea</i>	Endangered	Cormous geophyte, 40--45 cm, stem with a fibrous neck. Leaves linear. Flowers red with dark centre, tube filiform. Aug.--Sept. Stony clay flats, NW (Tulbagh).	1	Seed must be collected and stored with the Millenium Seedbank Project. The species must be added to Ex-situ collections at Kirstenbosch Botanical Gardens The locality of this species needs to be conserved and cleared of alien vegetation.



Species	RDB Status	Description	No. of localities	Conservation Action needed
<i>Geissorhiza tulbaghensis</i>	Endangered	Cormous geophyte, 8--15 cm, tunics woody, imbricate, stem velvety. Leaves linear. Flowers white with dark centre, zygomorphic. Aug.-Sept. Clay flats, NW, SW (Porterville to Wellington).	3	Seed must be collected and stored with the Millenium Seedbank Project. The species must be added to Ex-situ collections at Kirstenbosch Botanical Gardens



Species	RDB Status	Description	No. of localities	Conservation Action needed
<i>Sparaxis grandiflora</i> subsp. <i>grandiflora</i>	Vulnerable	Cormous geophyte, 10--25 cm. Leaves lanceolate, sometimes prostrate. Flowers almost actinomorphic, with unilateral stamens and style, white to plum-red. Aug.--Sept. Clay flats and slopes in renosterveld, NW, SW (Clanwilliam to Bredasdorp).	7	Seed must be collected and stored with the Millenium Seedbank Project. The species must be added to Ex-situ collections at Kirstenbosch Botanical Gardens



Species	RDB Status	Description	No. of localities	Conservation Action needed
<i>Ixia viridiflora</i> subsp <i>viridiflora</i>	Endangered	Cormous geophyte, 50--100 cm. Leaves narrow. Flowers in elongate, lax spikes, green with dark purple-black centre, tube filiform. Sept.--Oct. Rocky, mostly clay slopes, NW (Tulbagh to Wolseley).	3	Seed must be collected and stored with the Millenium Seedbank Project. The habitat of this species must be protected. Landowners needs assistance with developing a sound fire management plan



Species	RDB Status	Description	No. of localities	Conservation Action needed
<i>Moraea incurva</i>	Vulnerable	Cormous geophyte, 35--40 cm. Leaf solitary, linear, channelled. Flowers deep blue with yellow or white markings. Oct. Clay soils in renosterveld, NW (Tulbagh valley).	5	Seed must be collected and stored with the Millenium Seedbank Project. Two of the localities do not occur in protected areas. The sites where this species occurs must be conserved and managed appropriately



Photo: Rupert Koopman

Species	RDB Status	Description	No. of localities	Conservation Action needed
<i>Circandra serrata</i>	Critically Endangered	Sparsely branched shrublet to 60 cm. Leaves to 35 mm long, trigonous, acute, free at bases, margins toothed. Flowers solitary, yellow, to 50 mm diam., filamentous staminodes absent. Fruits 5-locular, c. 12 mm diam. Nov.--Jan. ?, NW, SW (Tulbagh to Villiersdorp)	1	Seed must be collected and stored with the Millenium Seedbank Project. The site where this species occurs must be conserved and managed appropriately. Material should be collected and propagated in an ex situ collection. Species must be monitored annually.



Photo: Rupert Koopman

Species	RDB Status	Description	No. of localities	Conservation Action needed
<i>Leucadendron chamelea</i>	Critically Endangered	Dioecious shrub to 2.3 m, branching from the base. Leaves linear-oblong, c. 40 mm long, involucral leaves slightly longer, yellow. Flower heads c. 20 mm diam., strongly scented. Sept.--Oct. Sandstone flats, NW, SW (Cold Bokkeveld to Franschoek valley).	7	Seed must be collected and stored with the Millennium Seedbank Project. The site where this species occurs must be conserved and managed appropriately. Grazing should not be allowed in the area where this species occurs. Material should be collected and propagated in an ex situ collection. Species must be monitored annually.



Photo: Nick Helme

Species	RDB Status	Description	No. of localities	Conservation Action needed
<i>Aspalathus tulbaghensis</i>	Critically Endangered	Thorny shrub, 0.15--5 m. Leaves 3-foliolate, leaflets terete or angular, pungent. flowers few on thorny branchlets, slightly large, wing blades more than 10 mm and keel blades more than 9 mm long, pale or bright yellow or orange, standard sometimes partly violet, keel shortly hairy, calyx adpressed-hairy, lobes pungent., Nov. Renosterveld-fynbos scrub, SW (Wolseley) ,	2	Seed must be collected and stored with the Millenium Seedbank Project. The site where this species occurs must be conserved and managed appropriately. One of the populations is severely threatened by alien invasives. This species needs fire to survive and the proper fire regimes must be maintained. Material should be collected and propagated in an ex situ collection. Species must be monitored annually.



Species	RDB Status	Description	No. of localities	Conservation Action needed
<i>Aristea nigrescens</i>	Critically Endangered	Evergreen geophyte, 200-300 mm high, stems angled to slightly winged, leaves in a basal fan linear, 3-5mm wide, flowers shortly pedicillate white to pale blue, outer tepals partially blackish glossy on the outer side, capsules 3mm long, cylindrical Aug – Sep. Fynbos renosterveld transition (Tulbagh to Wolseley)	1	Seed must be collected and stored with the Millenium Seedbank Project. The site where this species occurs must be conserved and managed appropriately. This species needs fire to survive and the proper fire regimes must be maintained. Material should be collected and propagated in an ex situ collection. Species must be monitored annually. New areas should be sampled to find more populations

RDB species list - Tulbagh Valley and surrounds

Key to the 1997 RDB categories

Taxon	1997 RDB Status	Current RDB Status	Current RDB Criteria
<i>Acmadenia macradenia</i>	R	VU	D2
<i>Agathosma eriantha</i>	V	VU	B1ab(ii,iii,iv,v) +2ab(ii,iii,iv,v)
<i>Aristea nigrescens</i>	Not listed	CR	
<i>Aspalathus tulbaghensis</i>	Not listed	CR	B1ab(ii,iii)
<i>Circandra serrata</i>	EX	CR	B1ab(iii,v)+2ab(iii,v)
<i>Drosanthemum striatum</i>	Not listed	VU	B1ab(ii,iii,iv,v)
<i>Elegia extensa</i>	I	EN	B1ab(ii,iii)+2ab(ii,iii)
<i>Erica chrysocodon</i>	E	VU	D2
<i>Geissorhiza monanthos</i>	I	NT	B1ab(I,ii,iii,iv,v)
<i>Geissorhiza tulbaghensis</i>	Not listed	EN	B1ab(ii,iii,iv,v)
<i>Gladiolus recurvus</i>	I	VU	B1ab(ii,iii,iv,v)+2ab(ii,iii,iv,v)
<i>Isoetes capensis</i>	I	EN	B1ab(ii,iii,iv,v) +2ab(ii,iii,iv,v)
<i>Isoetes stellenbossiensis</i>	Not listed	NT	
<i>Ixia campanulata</i>	E	VU	B1ab(I,ii,iii,iv,v) + 2ab(I,ii,iii,iv,v)
<i>Ixia mostertii</i>	R	EN	A4c; B1ab(ii,iii,iv,v) + 2ab(ii,iii,iv,v); C1
<i>Ixia rouxii</i>	K	DD	D
<i>Ixia vinacea</i>	I	EN	B1ab(ii,iii,v) + 2ab(ii,iii,v)
<i>Ixia viridiflora viridiflora</i>	V	EN	B1ab(i,iii,iv,v) + 2ab(ii,iii,iv,v)
<i>Lachenalia polyphylla</i>	E	EN	B1ab(ii,iii,iv,v)
<i>Lampranthus aureus</i>	Not listed	EN	Bab(iii) + 2ab(iii)
<i>Lampranthus filicaulis</i>	Not listed	VU	A2c); C1
<i>Lampranthus peacockiae</i>	Not listed	VU	B1ab(ii,iii,iv,v)
<i>Lapeirousia azurea</i>	Not listed	DD	D
<i>Leucadendron chamelaea</i>	E	CR	A4c
<i>Leucadendron lanigerum laevigatum</i>	Not listed	CR	A2c; B1b(i,iii,iv,v)c(iv)
<i>Leucadendron lanigerum lanigerum</i>	Not listed	EN	A2c
<i>Leucadendron corymbosum</i>	V	NT	
<i>Leucospermum vestitum</i>	Not listed	NT	
<i>Moraea cooperi</i>	V	VU	B1ab(ii,iii,iv,v)
<i>Moraea incurve</i>	E	VU	D1 + D2
<i>Moraea tulbaghensis</i>	V	EN	B1ab(ii,iii,iv,v)
<i>Otholobium bolusii</i>	V	NT	B
<i>Otholobium incanum</i>	V	VU	D2
<i>Pentaschistis ecklonii</i>	I	EN	B1ab(i,ii,iii,iv,v) + 2ab(i,ii,iii,iv,v)
<i>Rafnia crispa</i>	I	CR	B1ab(iii)+2ab(iii)
<i>Sparaxis grandiflora grandiflora</i>	R	EN	B1ab(ii,iii,v)
<i>Watsonia dubia</i>	E	EN	D
<i>Watsonia humilis</i>	E	CR	B1ab(i,ii,iii,iv,v); D
<i>Xiphotheca lanceolata</i>	I	EN	B1ab(i,ii,iii,iv,v)

Symbol	RDB category	Description
Ex	Extinct	Taxa which are no longer known to exist in the wild after repeated searches
E	Endangered	Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating.
V	Vulnerable	Taxa believed likely to move into the Endangered category in the near future if factors causing decline continue operating.
R	Rare	Taxa with small world populations that are not at present Endangered or Vulnerable, but are at risk as some unexpected threat could easily cause a critical decline.
I	Indeterminate	Taxa known to be Extinct, Endangered, Vulnerable or Rare but for which information is insufficient to decide which of the four categories is appropriate.
K	Insufficiently Known	Taxa that are suspected but not definitely known to belong to any of the above categories, because of the lack of information

Key to the current RDB categories and criteria

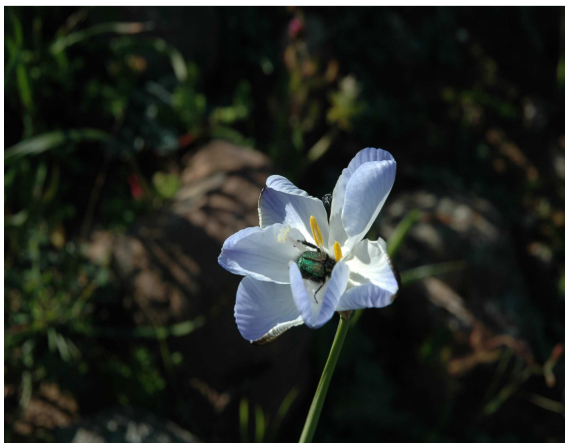
Symbol	RDB category	Description
Ex	Extinct	A taxon is Extinct when there is no reasonable doubt that the last individual has died.
EW	Extinct in the Wild	A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range.
CR	Critically Endangered	A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see table below), and it is therefore considered to be 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 criteria A to E for Endangered (see table below), and it is therefore considered to be 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 criteria A to E for Vulnerable (see table below), and it is therefore considered to be facing a high risk of extinction in the wild.
NT	Near Threatened	A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.
DD	Data Deficient	A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status.

Table 1. Summary of the five criteria (A-E) used to evaluate if a taxon belongs in a threatened category (Critically Endangered, Endangered or Vulnerable).

Use any of the criteria A-E	Critically Endangered	Endangered	Vulnerable
A. Population reduction Declines measured over the longer of 10 years or 3 generations			
A1	> 90%	>70%	> 50%
A2, A3 & A4	> 80%	> 50%	> 30%
A1. Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND understood AND ceased based on and specifying any of the following:			
(a) direct observation			
(b) an index of abundance appropriate to the taxon			
(c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality			
(d) actual or potential levels of exploitation			
(e) effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.			
A2. Population reduction observed, estimated, inferred, or suspected in the past where the causes of reduction may not have ceased OR may not be understood OR may not be reversible, based on any of (a) to (e) under A1			
A3. Population reduction projected or suspected to be met in the future (up to a maximum of 100 years) based on any of (b) to (e) under A1.			
A4. An observed, estimated, inferred, projected or suspected population reduction (up to a maximum of 100 years) where the time period must include both the past and the future, and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible, based on any of (a) to (e) under A1.			
B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy)			
B1. Either extent of occurrence	< 100 km ²	< 5,000 km ²	< 20,000 km ²
B2. or area of occupancy	< 10 km ²	< 500 km ²	< 2,000 km ²
and 2 of the following 3:			
(a) severely fragmented or # locations	= 1	≤ 5	≤ 10
(b) continuing decline in (i) extent of occurrence (ii) area of occupancy, (iii) area, extent and/or quality of habitat, (iv) number of locations or subpopulations and (v) number of mature individuals.			
(c) extreme fluctuations in any of (i) extent of occurrence, (ii) area of occupancy, (iii) number of locations or subpopulations and (iv) number of mature individuals.			
C. Small population size and decline			
Number of mature individuals	< 250	< 2,500	< 10,000
and either C1 or C2 :			
C1. An estimated continuing decline of at least up to a maximum of 100 years	25% in 3 years or 1 generation	20% in 5 years or 2 generations	10% in 10 years or 3 generations
C2. A continuing decline and (a) and/or (b)			
(a i) # mature individuals in largest subpopulation	< 50	< 250	< 1,000
(a ii) or % mature individuals in one subpopulation =	90-100%	95-100%	100%
(b) extreme fluctuations in the number of mature individuals			
D. Very small or restricted population			
Either (1) number of mature individuals	< 50	< 250	< 1,000
or (2) restricted area of occupancy	na	na	typically: AOO < 20km ² or # locations ≤5
E. Quantitative Analysis			
Indicating the probability of extinction in the wild to be at least or	50% in 10 years 3 generations (100 years max)	20% in 20 years or 5 generations (100 years max)	10% in 100 years

Summary Statistics for RDB species

- ❖ 39 RDB species occur in the Tulbagh Valley
- ❖ During the study we mapped and recorded population data for 22 species. Some of the species on the list occur just outside of the Tulbagh Valley but there are herbarium records from the Tulbagh Valley. There has been much transformation the area and although 17 species were not found we will continue to search for these species. The population and threat data collected for these species were used by the SANBI Threatened Species to complete the Red List assessments.
- ❖ 32 species Red list status changed and 22 of these species were up listed from lower categories to higher categories.
- ❖ 12 species was not listed on the Red list before and now appear for the first time. Reasons for this is that species have become more threatened due to loss of habitat and decline in population numbers and the not much information was available for these species and they were not considered threatened. At least 2 of the species that were not listed were identified by the project team.
- ❖ 6 species are listed as Critically Endangered and the project team has population data for 4 of these species.
- ❖ *Aristea nigrescens* is a new species that was discovered.
- ❖ *Circandra serrata* was listed as extinct but a consultant doing a botanical study in the area rediscovered this species.



Partnerships

Cape Nature Conservation Stewardship project

The Conservation Stewardship Project was developed to investigate ways of encouraging conservation stewardship of privately owned areas in the Western Cape Lowlands, with the ultimate goal to expand conservation beyond the boundaries of formally conserved areas – to the benefit of landowners, their immediate environment and South Africa.

The Stewardship project offers 3 options to landowners who would like to set aside land for conservation or use the land sustainably. These three options are:

- ❖ **Contract Nature Reserves** – comprising of legally recognised contracts or servitudes on private land to protect biodiversity in the long term.
- ❖ **Co-operation agreements** – negotiated legal agreements between Cape Nature and a landowner for conserving biodiversity in the medium term.
- ❖ **Conservation areas** –
- ❖ flexible options with no defined period of commitment.

Landowner benefits and incentives will increase in conjunction with the level of security and land use limitations of each option

What is Stewardship?

Stewardship refers to the wise use, management and protection of that which has been entrusted to you or rightfully yours. Within the context of conservation, stewardship means protecting important ecosystems, effectively managing alien invasive species and fires, and grazing and harvesting without damaging the veld.



Tulbagh Renosterveld Project assistance with the Stewardship Project:

- ❖ The project team was involved in a stewardship prioritisation exercise for the Upper Breede River Valley. At this stage we had completed most of the fieldwork and the data that we collected was directly used in developing a list of target farms for the Tulbagh area.
- ❖ The spatial layer of the renosterveld fragments and the priority sites was given to the Stewardship extension officer
- ❖ The Project team introduced the extension officer to the landowners of the priority farms.
- ❖ We have assisted the extension officer in developing the Stewardship assessment forms that is required before landowners are considered for Stewardship agreements

Biodiversity and Wine Initiative (BWI)

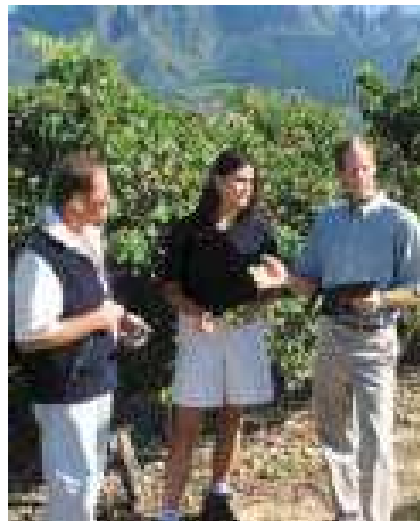
The Biodiversity & Wine Initiative (BWI) is a partnership between the South African wine industry and the conservation sector to minimise the further loss of threatened natural habitat, and to contribute to sustainable wine production, through the adoption of biodiversity guidelines by the South African wine industry.

BWI aims to:

- ❖ Prevent further loss of habitat in critical sites;
- ❖ Increase the total area set aside as natural habitat in contractually protected areas;
- ❖ Promote changes in farming practices that enhance the suitability of vineyards as habitat for biodiversity, and reduce farming practices that have a negative impact on biodiversity, both in the vineyards and in surrounding natural habitat;
- ❖ Create marketing opportunities for the wine industry by positioning the biodiversity of the CFK, and the industry's proactive stance on biodiversity, as a unique selling point to differentiate Brand South Africa.

Tulbagh Renosterveld Project assistance with the Biodiversity and Wine Initiative:

- ❖ Three of the landowners from the priority clusters are wine farmers.
- ❖ The Project team spent a day with the Biodiversity and wine initiative to introduce BWI extension officers to the Landowners. The BWi could introduce their project to the landowners.
- ❖ This proved to be a very useful partnership. The project team facilitated the interaction between various projects including the BWI. This ensured that the landowners were well informed about all the conservation initiatives being implemented in the area



National Landcare Programme (NLP)

The vision for the National LandCare Programme (NLP) is to have communities and individuals adopt an ecologically sustainable approach to the management of South Africa's environment and natural resources, while improving their livelihoods

The NLP objectives are to:

- ❖ Promote partnerships between the communities, the private sector and government in the management of natural resources;
- ❖ Establish institutional arrangements to develop and implement policies, programs and practices that will encourage the sustainable use of natural resources;
- ❖ Encourage skill development for sustainable livelihoods;
- ❖ Encourage opportunities for the development of business enterprises with a sustainable resource management focus;
- ❖ Enhance the long-term productivity of natural resources.

Management recommendations

Broad guidelines for managing natural veld

- 1) Any development should be avoided in areas where threatened species are recorded.
- 2) A ploughing permit must first be obtained from the National Department of Agriculture in order to develop virgin soil as stipulated in the Conservation of Agricultural Resources Act, 1983 (No 43 of 1983), regardless of who owns the land. Any land older than 10 years is regarded as virgin ground.
- 3) Priority habitats such as renosterveld, lowland fynbos and succulent karoo on alluvial soils should be avoided at all costs.
- 4) A national assessment has been made of every vegetation type in SA, classifying it as critically endangered, endangered, vulnerable or least threatened, according to how much remains compared to its original extent. In the Western Cape alone, there are 15 vegetation types that are already critically endangered (e.g. Swartland Shale Renosterveld). It is therefore strongly recommended that before any development is contemplated, that you contact the CapeNature representative in your area to determine the conservation value of any virgin land and consider alternatives.
- 5) Avoid further fragmentation of threatened vegetation types identified in the Tulbagh Valley, where possible links between fragments should be rehabilitated
- 6) The connectivity between patches is critically important for allowing movement of pollinators
- 7) Degraded areas connecting important large fragments should be rehabilitated to ensure that corridors maintain ecosystem functionality.
- 8) Alien Invasive species such as Acacia species, Eucalyptus sp and Pinus sp are eradicated.
- 9) Priority areas identified should be included as Cape Nature Stewardship priority sites and negotiations with landowners of these important fragments should be undertaken to conserve the priority fragments
- 10) Wetlands and seasonally wet depressions are special habitats and care should be taken not to develop areas where these features occur. Adjacent developments should not affect the water quality or quantity flowing in these areas.
- 11) Ensure that areas that will be conserved and protected have proper management plans that include alien invasive control and maintaining appropriate fire regimes.
- 12) Fragments of vegetation should not be exposed to any chemical applications like fungicide, herbicide or insecticide.

National Environmental Management Act (Act 107 of 1998) section 2 requires that “ the disturbance of ecosystems and loss of biological diversity are avoided, or where they can not be altogether avoided, are minimised and remedied”.

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