

# FRIENDS OF THE BAVIAANSKLOOF WILDERNESS AREA TRUST (IT986/2001)



Protect, Preserve and Restore

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## Saving the Baviaanskloof cedar (*Widdringtonia schwarzii*) campaign Standard operating procedure

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Photo: PlantZAfrika/SANBI

## 1. Motivation

The Baviaanskloof Cedar is classified as Near Threatened in the recent Red Data List assessments done in 2006 for the IUCN. This is as a result of too frequent wild fires in the area, uncontrolled harvesting of the cedar in the past and the clearing of land for commercial farming. Off-road tracks have been identified as a possible future threat to this species unless strictly controlled, as 4 x 4 vehicles disturb habitats and destroy the fragile saplings.

## 2. Description of plant (Reference and pictures: PlantZAfrica/SANBI)

2.1 Family : Cupressaceae (cypress family)

2.2 Common names : Baviaanskloof cedar, Willowmore cedar (Eng.);

Baviaanskloofseder (Afr.)

2.3 *Widdringtonia schwarzii* is an ancient giant from the Baviaanskloof Mountains, often with a gnarled trunk and spreading branches and can reach 40 m in height. This slow maturing tree was historically used for building timber and is at present under threat from runaway fires.

2.4 *Widdringtonia schwarzii* is much larger than its cousin *W.cedarbergensis* and grows to a height of 17-20 m on average. The bark is red-grey, thin and fibrous; leaves are flattened, ovate, grey-blue, and darker than those of *W.nodiflora*, the mountain cypress. Juvenile leaves are narrow and needle-like and are spirally arranged. Fruits are in the form of cones, with male and female cones borne on the same plant. Male cones are very small, up to 2 mm long and are produced in autumn. Female cones are dark brown, with rough, warty scales. They develop in autumn and remain on the tree for almost three years before the seeds are released during late summer. As a result, cones can be found in various stages of development on the tree, all year round. Seeds are black-brown, ovoid and broadly winged.



Cone opening; ideal for harvesting

Photos: PlantZAfrika/SANBI

2.5 *Widdringtonia schwarzii* occurs in the Baviaanskloof and Kouga Mountains in the Eastern Cape. It is endemic to this area and can be found in rocky ravines and growing on steep cliff faces in kloofs. This tree prefers elevations of 70-1 220 m.

2.6 Treat the seeds of *Widdringtonia schwarzii* with Instant Smoke Plus Seed Primer or soak for 12 hours in cold water to aid with germination. Seeds should be sown in autumn when the nighttime temperatures have dropped to 15°C.

## 3. Summary of technique

- During November to January locate trees and harvest no more than 20% of the ripe/partially opened cones on the tree.

- Allow the cones to dry out and fully open allowing the seeds to be removed. If this is done outdoors take care that wind does not disperse the light wing shaped seeds.
- During late summer it is possible to pick seeds up from under a mature cone bearing cedar but this is slow and time consuming and often seeds picked up will have been eaten by rodents.
- Place the seeds in a sealed container and store in a cool and dark place.
- Planting out of seeds to take place May to June.
- Seeds to be planted out in locations described below
- The night before soak the seeds in the cold or smoked water.
- At the chosen location plant the seeds 50mm into the soil.
- Record the location and number of seeds planted using a GPS.
- About one year later revisit seed planting locations and record the number of surviving plants.
- Send data to FOBWA for record purposes.

#### **4. Harvesting seeds**

- During Nov to Jan identify 3 year old female cones ready for harvesting.
- Conduct a survey of the number of cedars in the area and establish GPS coordinates of every specimen and record on the form in Appendix 1 whether seeds were harvested from the specimen or not.
- Based on the conditions prevailing in a specific location estimate the optimum amount of seeds to be planted and record this information.
- Cones ready for harvesting can be identified by the cones opening up to expose the seeds.
- When harvesting the general rule is not to take more than 20% of the available seed on any specific tree. In the case of the cedar it is sufficient to harvest not more than 20 cones as this will provide sufficient seeds for replanting.
- Place seeds into a sealed container identifying date and location of extraction. Do not use plastic bags to store the seeds as this can lead to fungal attack. Glass containers is preferred.
- Preferably use a GPS to get location coordinates.
- Enter seed harvest data into the attached record sheet – appendix 1
- Store seeds in a cool and dry place.

#### **5. Treatment of seeds in the field to improve germination**

- To enhance germination success seeds need to be soaked in cold water for 12 hours.
- Apply a fungicide to the seeds if available.

#### **6. Selecting and preparation of a planting location**

- Seeds harvested in a particular area need to be planted out in the same area.
- Initial planting should be conducted high in the kloof away from potential human impact. In addition once these trees mature seeds will fall into the streams and be carried downwards where a number will be deposited in locations for optimal survival. This mimics what happens in the wilderness.
- To improve chances of survival optimum locations need to be chosen to plant seeds.

- An ideal location shall be one near perennial water supply, where soil depth is good, as near as possible to site of harvesting and has passive irrigation possibilities.
- Passive irrigation can be a depression into which water naturally flows.

## **7. Planting method**

- Soak the seeds in water for the prescribed time the night before.
- Create a shallow basin about 0,5 m in diameter and dig approximately a 10cm<sup>3</sup> hole in the middle. Place organic material at the bottom of the hole and then a 2cm layer of soil on which the seeds are placed. If water is available water the hole moderately. Place more organic material over the seeds and then more soil to fill the hole
- Gather dry leaf litter from the area and apply as a mulch over the planted seed at a thickness of approximately 20mm. This will keep the soil damp and moderate temperatures.
- If needed insert a stake to mark the location for later inspection.
- Record each seed planted on a record sheet. Coordinates via GPS is preferred – see appendix 2

## **8. Follow up**

- Conduct annual campaigns.
- From year 2 onwards record surviving plants on previous record sheet.
- Supply a copy of record sheets annually to FOBWA.

**Friends of Baviaanskloof Wilderness Area**

**14th March 2012**



