

Saving *Marasmodes undulata*, one of the most threatened
plants in the Cape Floristic Region

Progress Report October 2022



Background and Project overview

Marasmodes undulata is a Critically Endangered species occurring in the Cape Floristic Region. This species is confined to one area in the town of Paarl, Western Cape, South Africa. Historical monitoring records showed a steep decline in population numbers over the last 30 years. This species, now known from a handful of plants was in urgent need of conservation interventions to ensure that the species does not go extinct. The 'Saving *Marasmodes undulata* project' aims to secure and bolster the current population, improve habitat condition and ensure effective management of the site.

Our overall objectives are: -

- Restoring and strengthening the population of *Marasmodes undulata* and associated threatened plants
- Improve the habitat condition of the site
- Support the municipality to effectively manage and conserve the site
- Create awareness about the conservation significance of the species and its associated habitat



Progress (May 2022 – October 2022)

Collect seeds and cuttings of *Maramodes undulata* and associated threatened plants

- All the rooted cuttings were replanted in pots and placed in the hardening off area. Due to a malfunction of the nursery irrigation system we did loose about 40 rooted cuttings but we did manage to save the majority of the plants. We currently have 67 plants in pots and 17 plants planted in the mother stock beds at Kirstenbosch Botanical Gardens
- In June we harvested the flowerheads that were hand pollinated and bagged. It was incredibly exciting to find fertile seeds.
- The Stellenbosch Botanical Garden plants had much greater success with seed production. Half of the seeds where sown and we had good germination rates. The rest of the seeds will be banked in the MSB. This has been an interesting experience because the germination rate of the original seeds from the MSB collection was extremely low. We assume that the germination has been more successful due to the seeds being fresh
- There are about 120 seedlings that has germinated at the Stellenbosch Botanical Gardens



Fig 1: Marasmodes cuttings transferred to pots and into hardening off area



Fig 2: Seeds harvested from hand pollinated plants

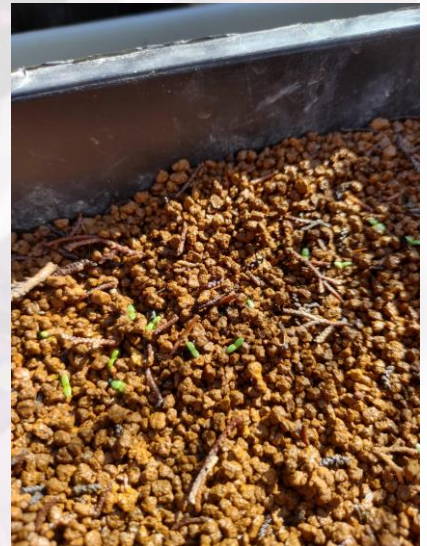


Fig 3: First signs of germination



Fig 4: Seedlings growing well (Sep22)

Progress (May 2022 – October 2022)

Collect seeds of dominant and ecologically important species for purpose of reseedling

- We not conduct any additional seed collecting trip between May and October.

Actively restore disturbed areas of the site

- We continued alien clearing and litter clean-up operations on site. The vibacrete fence around the informal settlement was completed in September 2022. This will help to limit the litter coming from the settlement and hopefully discourage vandalism of infrastructure on the site
- At the end of May we planted the geophytes that were rescued from a development site close by. Over 100 geophyte corms were planted in the restoration area at the Orleans Park.
- We are also very excited to report that three plants of *Marasmodes undulata* was found at the site. It was found in an area where they have not been recorded before and this gives us great hope that more plants will naturally recruit at the site. The plants were hand pollinated and bagged but unfortunately the bags drew attention to the plants and the bags with the flowerheads were removed by members of the informal settlement so we could not collect any seeds from the new plants found in the wild. We did check on the plants in August and the plants are still there and luckily were not completely removed.



Fig 5: Development site where geophytes were rescued



Fig 6: Planting geophytes at Orleans



Fig 7: One of the newly discovered maramodes plants at Orleans

Conduct habitat suitability analysis at sites within a 10 kilometer radius

- We supported the municipality to survey other sites in Paarl that is managed by them. We visited the Newton conservation area and recorded species that will be included on species lists for the site.

Facilitate engagement with provincial and local government agencies, civil society and relevant NGO's to discuss site protection status

- The official proclamation process has not been completed yet. The relevant assessment forms has been submitted to the provincial conservation agency (Cape Nature) and the estimated timeframe for completing the process is Mar 2023.

Revise management plan of site

- The management plan is in place now and our next focus will be to support the municipality to do a ecological burn on parts of the Orleans park area. There are two smaller fragments of natural vegetation within the recreational area of the park and the vegetation is very old, so to revive these areas an ecological burn will make a huge difference to the condition of the site



Fig 8: *Oxalis capillacea* recorded at Newton is a new locality for this species



Fig 9: Areas identified for ecological burns on Orleans Park

Conduct open day and bioblitzes at the site

- We conducted a Bioblitz in September with interns from Kirstenbosch and Karoo Desert Botanical Gardens at the Orleans Conservation Area. The interns we engaged is part of the Groen Sebenza internship programme and the interns are involved in Restoration projects in the botanical gardens. The aim of the day was to introduce them to an active restoration project and to give basic training in the use of iNaturalist

Initiate friends group to support management and activities at the site

- Our iNaturalist project now has 296 observations with 129 species recorded. On our recent Bioblitz our threatened plants records included *Ixia abbreviata*, *Lachenalia contaminata* and *Geissorhiza geminata*.



Fig 10: Map showing iNaturalist observation as at 20 October 2022



Fig 11-13: *Geissorhiza geminata*, *Ixia abbreviata* and *Lachenalia contaminata*

Fig 14: Interns participating in a bioblitz