

EDITORIAL

Welcome to the first edition of Ombuto, the newsletter that will keep you updated on news and activities of the MSBP in Namibia. Why Ombuto? Ombuto means “seed” in the Oshiwambo language, one of the many languages spoken in Namibia. It is planned to publish this newsletter twice a year in electronic format. In this first issue, some background on the project will be given as well as a summary of activities to date while future editions will concentrate more on news and recent happenings. It is hoped, that this newsletter will develop into more than simply a report-back by project staff and that there will be interaction and contributions from others linked to seed conservation in Namibia and maybe even from fellow MSBP partners in other parts of the world.

Herta Kolberg
Country Co-ordinator, MSBP Namibia

WHAT IS THE MSBP ?

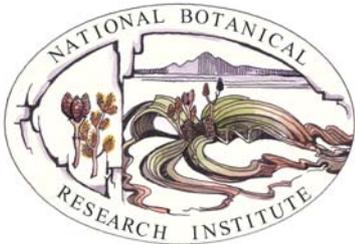
The Millennium Seed Bank Project (MSBP) is an inter-national initiative co-ordinated by the Royal Botanic Gardens, Kew in the United Kingdom. It is funded from various sources, including UK lottery money, private sponsors and the UK government.

The project started in 1995, concentrating on the U.K. flora and in 2000 the international component was initiated. At present, partners in 17 countries worldwide contribute to the MSBP, Namibia being one of 9 African nations.



THE PROJECT'S GLOBAL AIMS

- ✿ collect seeds, herbarium specimens and data from 10% (about 24 200) of the world's dryland plants with emphasis on threatened, rare and useful species
- ✿ conserve these to international standards at the Millennium Seed Bank and the countries of origin
- ✿ establish and develop partnerships to meet these objectives
- ✿ make seeds available for conservation in the wild and for research
- ✿ carry out research to improve all aspects of seed conservation
- ✿ facilitate access to information and transfer of best practice in seed banking to all project partners and the wider scientific community
- ✿ to increase public awareness of the need for plant conservation



Partnership projects vary from country to country, depending on national need and relevance. At the core of all partnerships, however, is the collection and conservation of seeds. In Namibia, the partner organisation is the National Botanical Research Institute (NBRI) of the Ministry of Agriculture, Water and Forestry (MAWF). This institute houses the national seed bank and herbarium, where half of all material collected under this project is stored. The partnership is based on an Access and Benefit Sharing Agreement between MAWF and the RBG, Kew. A full-time project co-ordinator, funded by the MSBP, is responsible for seed collection and co-ordination of project activities, while other Namibian institutions and individuals contribute on a part-time and voluntary basis.

SPECIFIC PROJECT AIMS IN NAMIBIA

- ✿ collection of seed, herbarium specimens and data of threatened, rare, endemic (species occurring only within the political borders of Namibia) and useful indigenous plants
- ✿ compilation of all available information on target species to assist in collection of their seed
- ✿ contribution by MSBP-Namibia staff to other conservation initiatives in Namibia, particularly red data listing (plants threatened with extinction) and rehabilitation of disturbed areas
- ✿ training and capacity building of Namibian partners
- ✿ involvement of other Namibian partners in seed conservation

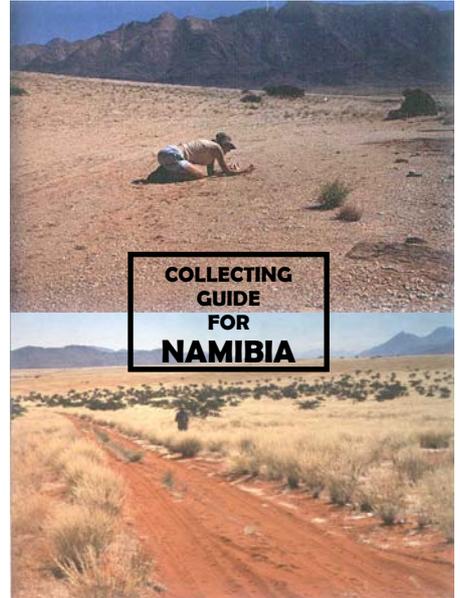


Collecting seed at Ruacana Falls

ACTIVITIES TO DATE

COLLECTING GUIDE

A significant achievement of the project has been the gathering of information on target species. The aim has been to focus on plants that occur only in Namibia (endemics) or nearly so, that are endangered or rare or have economic value. With financial assistance from RBG, Kew local staff put together data from the National Herbarium of Namibia and herbaria in South Africa and Europe. This was supplemented with information from literature. Photos of herbarium specimens, distribution maps, flowering and fruiting times and tables with distinguishing characters were added and compiled into a collecting guide. This assists seed collectors in the field to find and identify target species and hopefully collect their seed. The resulting Collecting Guide comprised of 7 volumes.



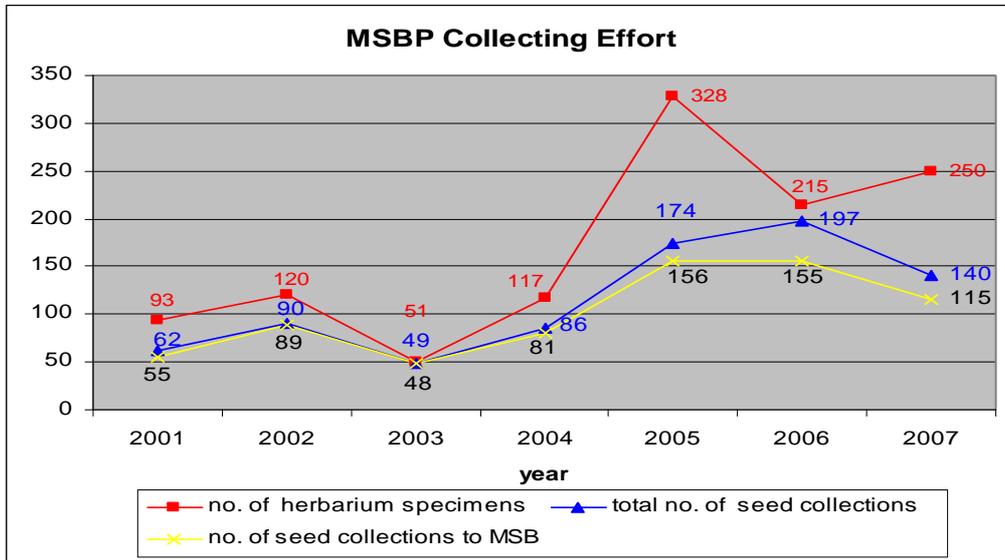
No of indigenous higher plants in Namibia	3860
No of species evaluated for the CG	1448
Endemic to Namibia	576
Endemic to Namibia already collected	146
Near Endemic to Namibia	541
Near Endemic to Namibia already collected	143
No of species on list for collecting [Oct 2006]	961
No of species on collecting guide with 2 or less collecting sites	179
No of species on collecting guide with 3 or more collecting sites	343
No of species on collecting guide with 10 or more collecting sites	211
No of species on collecting guide with 20 or more collecting sites	196
No of records from SPMNDB assessed for the CG	Over 18 000
No of records from SPMNDB (specimens in WIND & PRE) used in the CG; Data was also included from NBG BOL K M and certain literature	12821

Statistics for the Namibian Collecting Guide

SEED COLLECTING

The MSBP started activities in Namibia on a very small, low-key scale in 2001 with the signing of a Material Transfer Agreement (MTA). Staff members of the National Plant Genetic Resources Centre (NPGRC) of the Botanical Research Institute (NBRI) did seed collecting for the project in addition to their main duties. This proved to be less than satisfactory and in 2005 it was decided that the project would fund a full-time project co-ordinator and seed collector. Herta Kolberg was appointed in this position in July 2005. As a result, there was a marked increase in seed collections and activities towards the project (see graph on next page).

During the years 2001 to 2004 the annual target for seed collecting was 60 samples to be deposited at the MSB. This was increased in 2005 to 150 seed collections per year. Each seed sample is accompanied with comprehensive information from the collecting site, a herbarium specimen and often photo. Seed is pre-cleaned manually before being sent to the MSB, a laborious and often painful job that requires a lot of innovation, diligence and patience. For this, the project employs temporary seed cleaners to assist staff at the NPGRC.



Collecting highlights

Following more intensified field work since 2005, a number of interesting and special species were found. To date about 5 new species (species of *Lotononis*, *Aptosimum*, *Monechma*, *Ruellia*, *Amaryllidaceae*), still to be described, and about 6 species known from neighbouring countries but not yet recorded for Namibia were found on seed collecting trips by the MSBP. At least 15 species which were considered to be rare because of a scarcity of herbarium specimens, were discovered. Most of these were known from 30- to 50-year old type specimens only. For another 15 to 20 species, the MSBP collected the first or one of less than 5 specimens at the National Herbarium of Namibia (WIND). This illustrates the benefits of targeted collecting and the usefulness of the collecting guide – going prepared to target areas and knowing exactly what to look for there, has resulted in these success stories.

Threatened species banked

Of the 24 plant taxa listed as threatened (IUCN categories critically endangered, CR, endangered, EN, and vulnerable, VU) in Namibia, seed of 11 has been collected and conserved. This represents 46% of the threatened taxa, which is slowly nearing the Global Strategy for Plant Conservation (GSPC) target of 60%.

Lithops franciscii (VU)



Aloe pillansii (EN)

Gazania thermalis (CR)

Plectranthus unguentarius (VU)

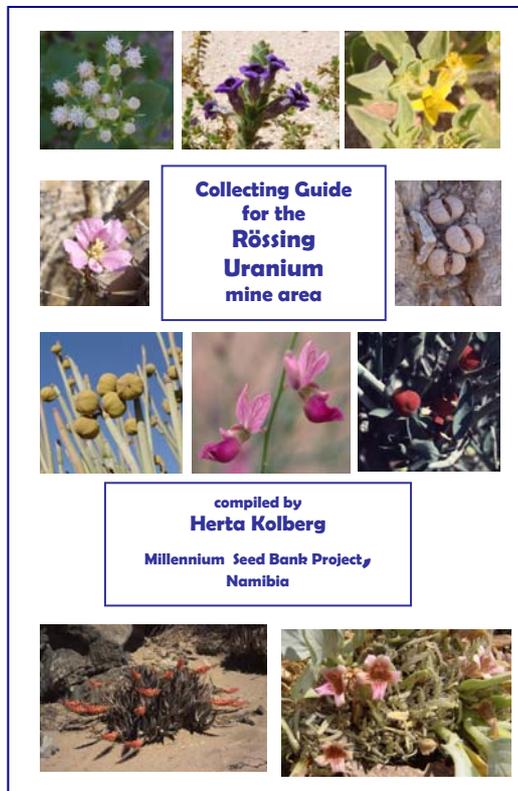
Euphorbia leistneri (VU)

TRAINING

The MSBP in Namibia also includes a small training component. Silke Rügheimer, who runs the National Botanic Garden, attended the Botanic Gardens Management course at Kew, UK in 2004. Elizabeth Lucas, technical assistant at the NPGRC, received individual training in seed cleaning and handling at the MSB in 2006. Both of them have passed on the knowledge gained to fellow staff members and to temporary helpers.

RESTORATION WORK

Initially, the MSBP in Namibia was planned to concentrate on seed collection and conservation. The use of banked seed is, however, an important reason for the existence of seed banks. The project therefore got involved in work that would make use of seed collections, mainly restoration/rehabilitation work at mines in Namibia.



Initially, through RBG, Kew's association with Rio Tinto, the MSBP was approached to assist the Rio Tinto owned Rössing Uranium mine near Swakopmund in their biodiversity strategy. Here the MSBP has trained mine staff in seed collecting, concentrating mainly on endemic plants that are found in the mine concession area. An illustrated manual (collecting guide) was prepared for the staff to assist them in finding the target species. Several seed collections have been made and following a particularly wet year in this otherwise dry desert area, the staff on site made a herbarium specimen collection which was identified by MSBP. This collection resulted in a rather comprehensive list of species for the area and will assist in managing the biodiversity on site. The largest part of the Rössing project, however, revolves around assessing the red data status of populations of *Adenia pechuelii* (elephant's foot) and *Lithops ruschiorum* both at the mine site and nationally by the threatened plants specialist at the NBRI, Sonja Loots. The project is nearing completion and as a final result will have in place management plans for the endemic plants at Rössing.

At the diamond mines of Namdeb, in the biodiversity-rich south-west of Namibia, staff from MSBP and the National Botanic Garden are collaborating with Namdeb, in particular with Dr. Antje Burke, in rehabilitation projects at two sites. One is at Bogenfels, a coastal site with severe winds, where MSBP and Namdeb staff collected seed prior to mining, testing methods of collecting and storage that are suitable for local conditions (low cost, manageable by few non-specialists). At the same site, some trials on re-establishment of *Salsola nollothensis*, the dominant woody species of the coastal strip vegetation, were initiated. This includes seed germination research at MSB under Rosemary Newton.

Rehabilitation:



collection of whole plants



collection of seed



Salsola experiment

The second site, Sendelingsdrift, is on the Orange River and is still to be mined in future. The ancient gravel terraces of the river which contain diamonds are unfortunately also home to the largest population of the threatened species, *Juttadinteria albata*. Research has been started on propagation of this plant at the Botanic Gardens under Silke Rügheimer as well as trials on site making use of the substrate that will be available after mining. An extensive seed collection of *Juttadinteria* was made at this site.

Propagation of *Juttadinteria albata*:



whole plants



cuttings



seedlings

The third mine where MSBP is involved on a more informal basis, is Valencia Uranium Limited, a mine in the central Namib that is expected to start production in 2010. The mine site houses a very large population of the rare, near-endemic *Adenia pechuelii* (elephant's foot). MSBP has provided assistance with mapping this population and contributed to the environmental impact assessment. Seed-set on elephant's foot seems to be poor and only a small number of seed was collected and banked so far. Collaboration will continue with assistance and advice and a possible trial on *Adenia* re-location. If available, more seed will be collected.

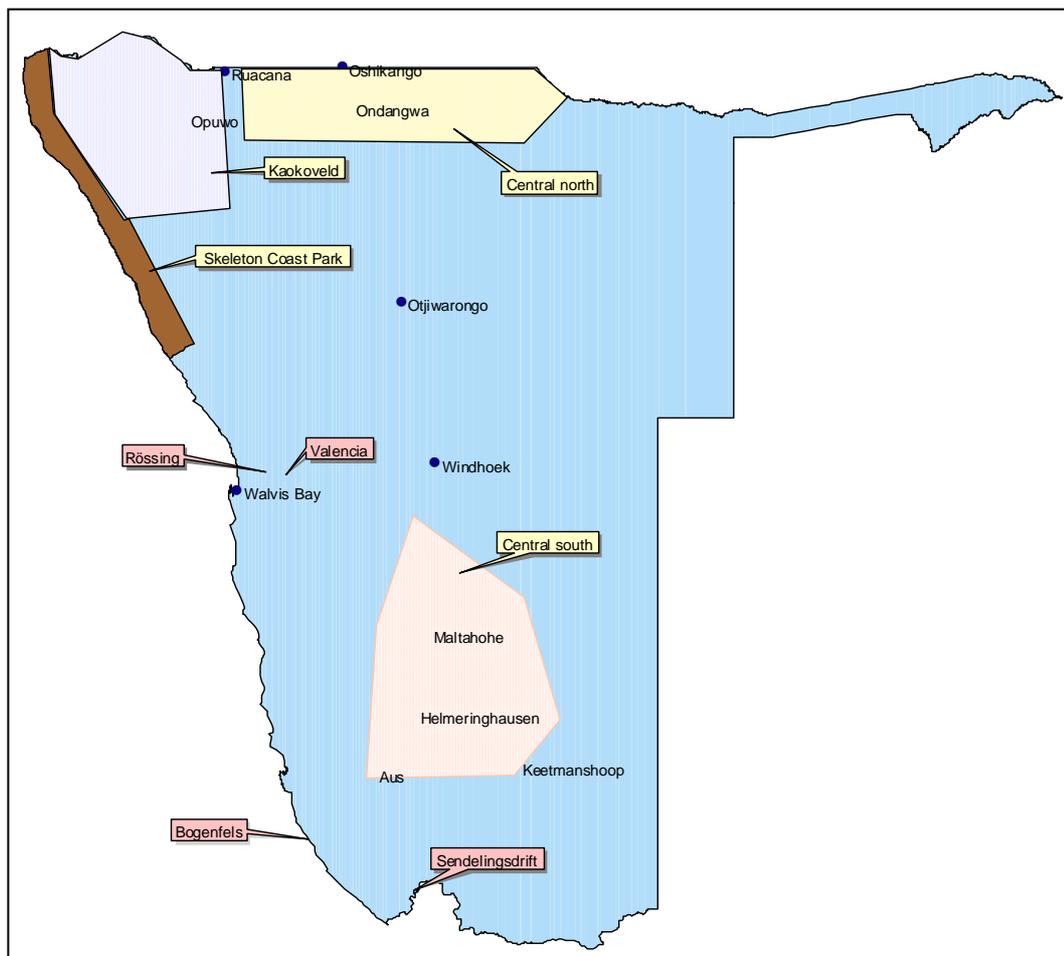


Large individual of the unusual *Adenia pechuelii*

PLANS FOR MARCH TO AUGUST 2008

The busiest time of year for seed collecting starts in March until about June with a second season for the south-west of Namibia after the there prevalent winter rains in September to November. Plans for the summer rainfall season are to launch expeditions to the Skeleton Coast Park and adjacent Kaokoveld (north-west), the central south and central north. Rains started late for the season, but were abundant and well distributed in most areas of the country. We therefore hope to find some more of the elusive species in those areas. We may also do trips into areas where particularly high rainfall has been reported in an attempt to collect some of the species that only appear in wet years.

Further seed collection of *Salsola* for the Bogenfels rehabilitation site will be done in March. The seed germination research under Rose Newton at MSB as well as the propagation of *Juttadinteria* by Silke Rügheimer at the NBG will continue. It is planned to transplant the first lot of propagated plants on site at Sendelingsdrift in May/June to establish the success rate of such an effort for future rehabilitation.



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